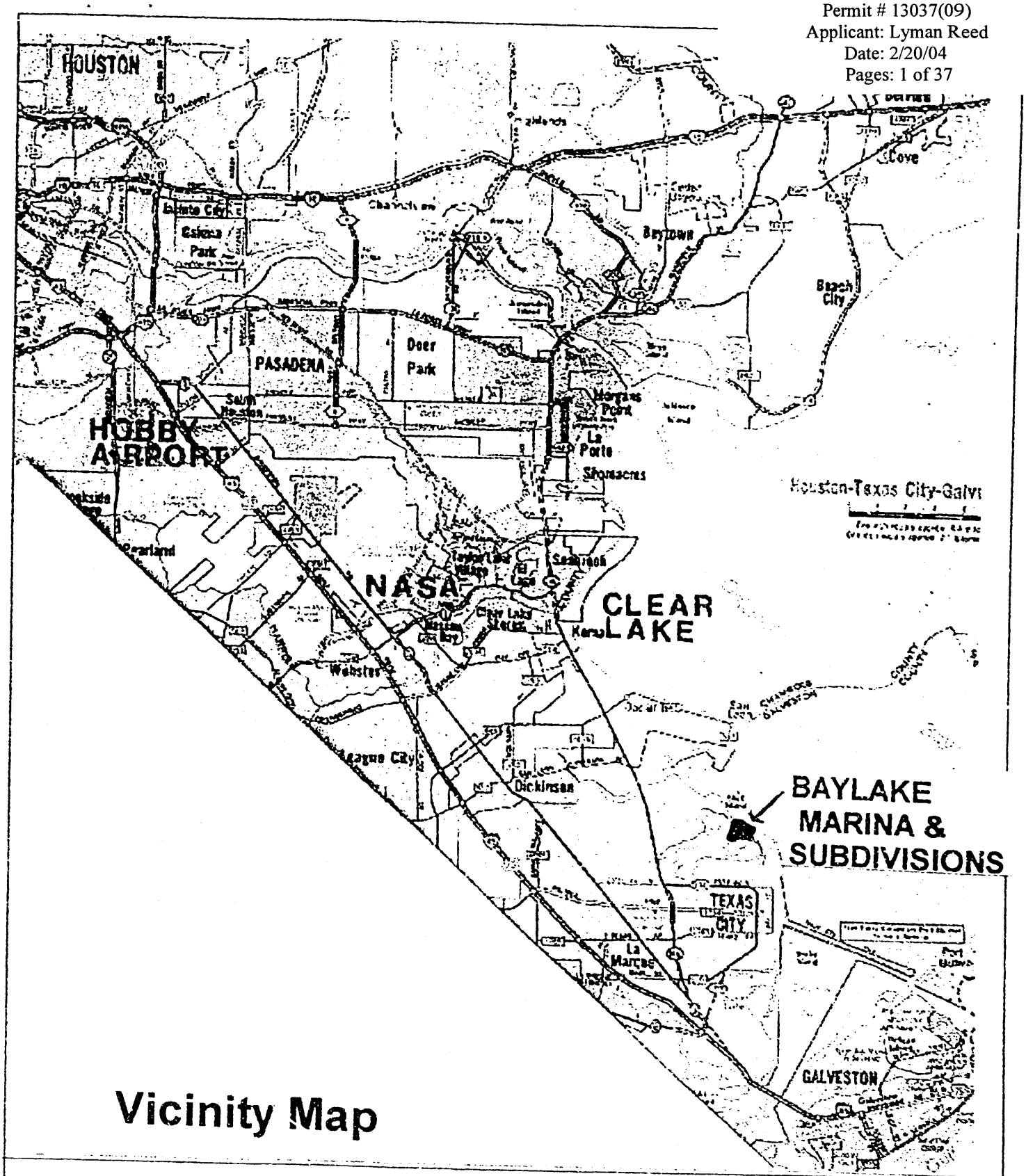
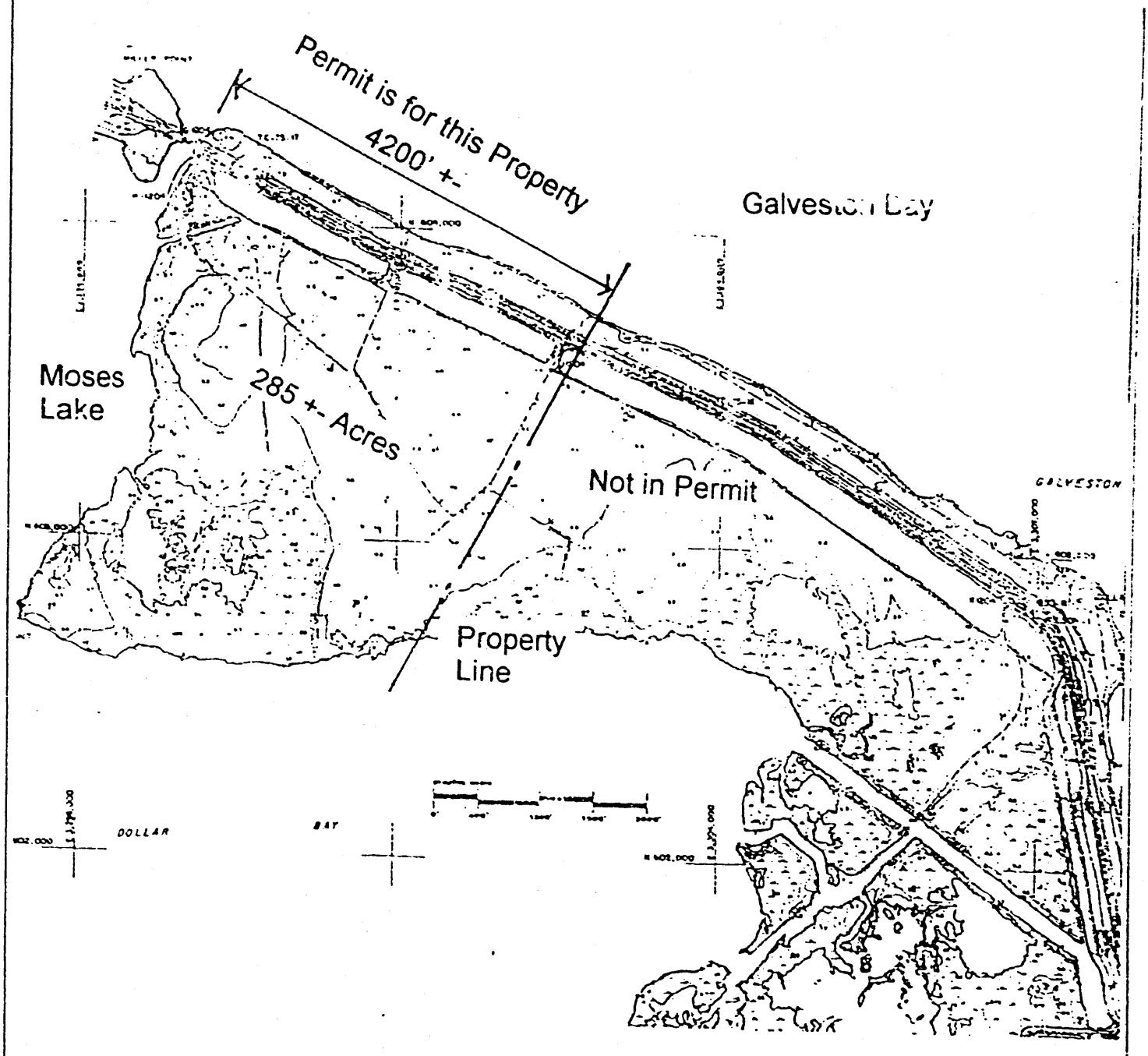


Vicinity Map

Proposed Marina and Subdivisions
Between Moses Lake and Galveston Bay
at Texas City
County of Galveston State of Texas

March 7. 2000

Reed and Clements, Inc. Architects and Planners



Master Site Plan - Existing Topography

N

Proposed Marina and Subdivisions
Between Moses Lake and Galveston Bay
at Texas City
County of Galveston State of Texas

March 7. 2000

Reed and Clements, Inc. Architects and Planners

FEB 17 2004

Permit # 13037(09)
Applicant: Lyman Reed
Date: 2/20/04
Pages: 3 of 37

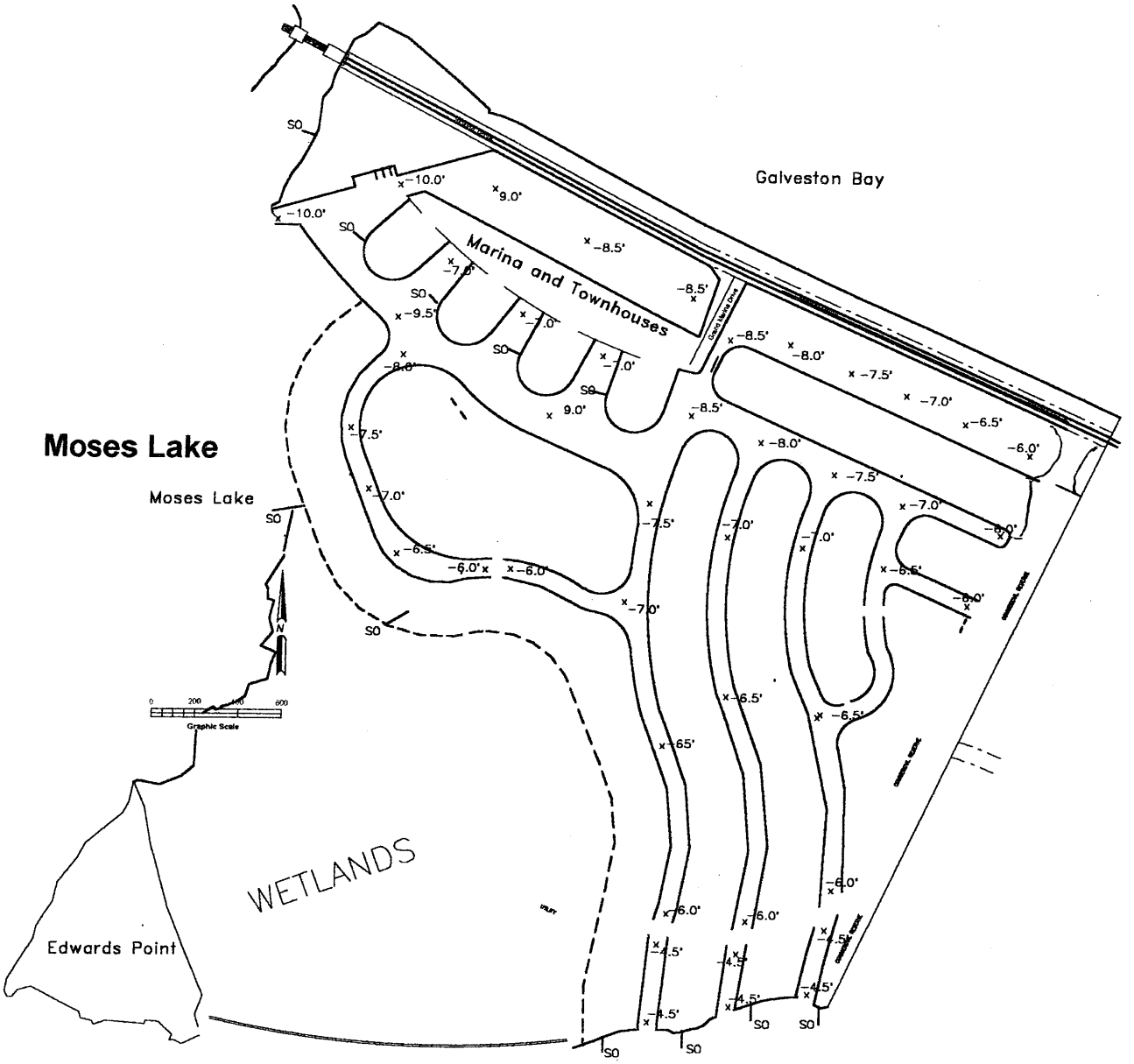
MASTER PLAN - Infrastructure

Between Moses Lake and Galveston Bay at Texas City

County of Galveston **State of Texas**

February 10, 2004

Page 3 of 37
Revised



All depths indicated in Permit Drawings are From Mean Sea Level. Depths to be excavated are 18" lower (18" below Mean Sea Level).

X −4.5" Initial and Maintained Depths Below Mean Sea Level . Excavated Depths are 18" below MSL.

S.O Storm Sewer Outlets

MASTER PLAN Excavations

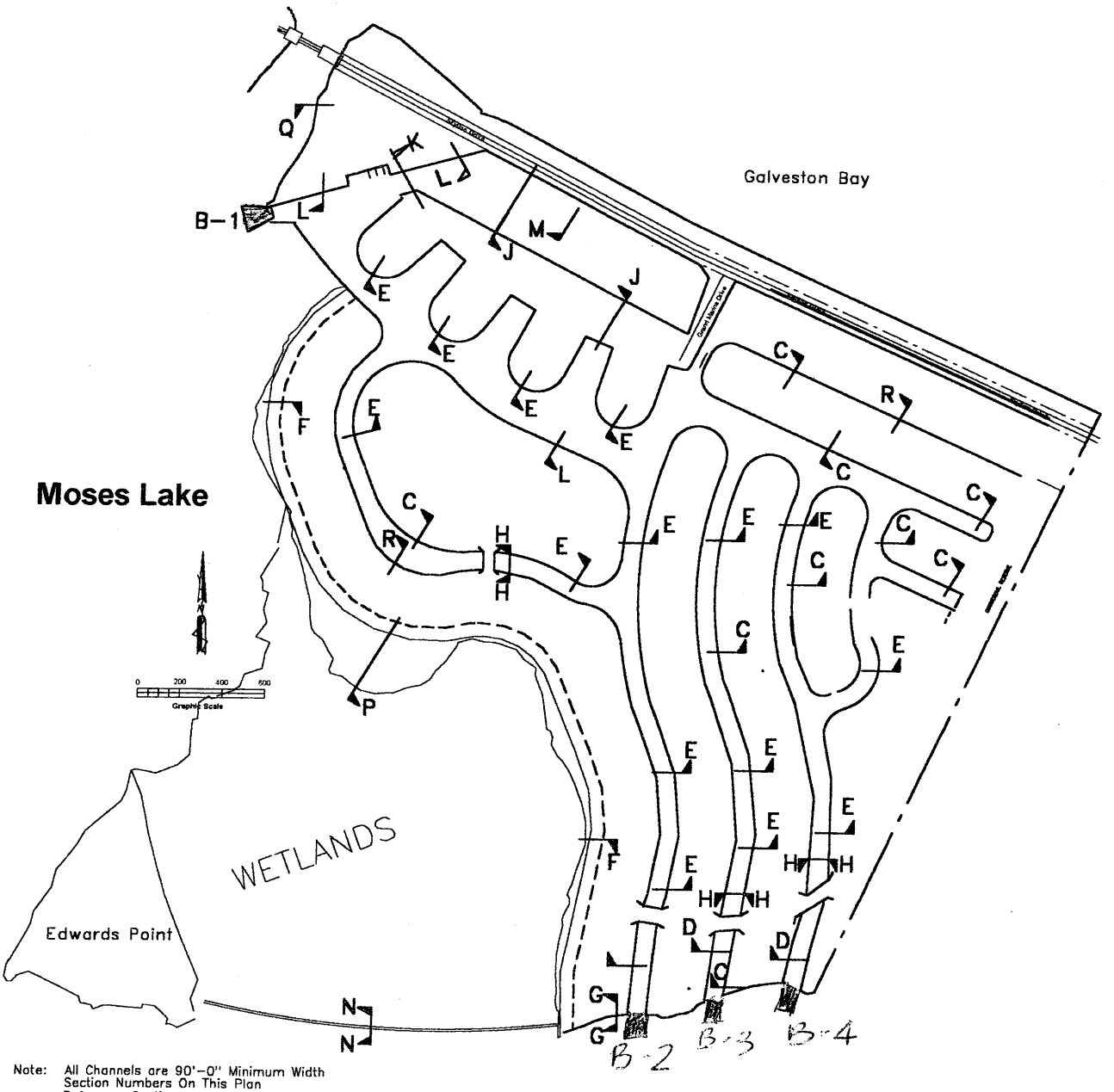
Between Moses Lake and Galveston Bay at Texas City

County of Galveston State of Texas

February 10, 2004

FEB 17 2004

Permit # 13037(09)
Applicant: Lyman Reed
Date: 2/20/04
Pages: 5 of 37



Note: All Channels are 90'-0" Minimum Width
Section Numbers On This Plan
Reference Sections and Details
On Following Pages.

Culveerts at Road Crossings
at Channels

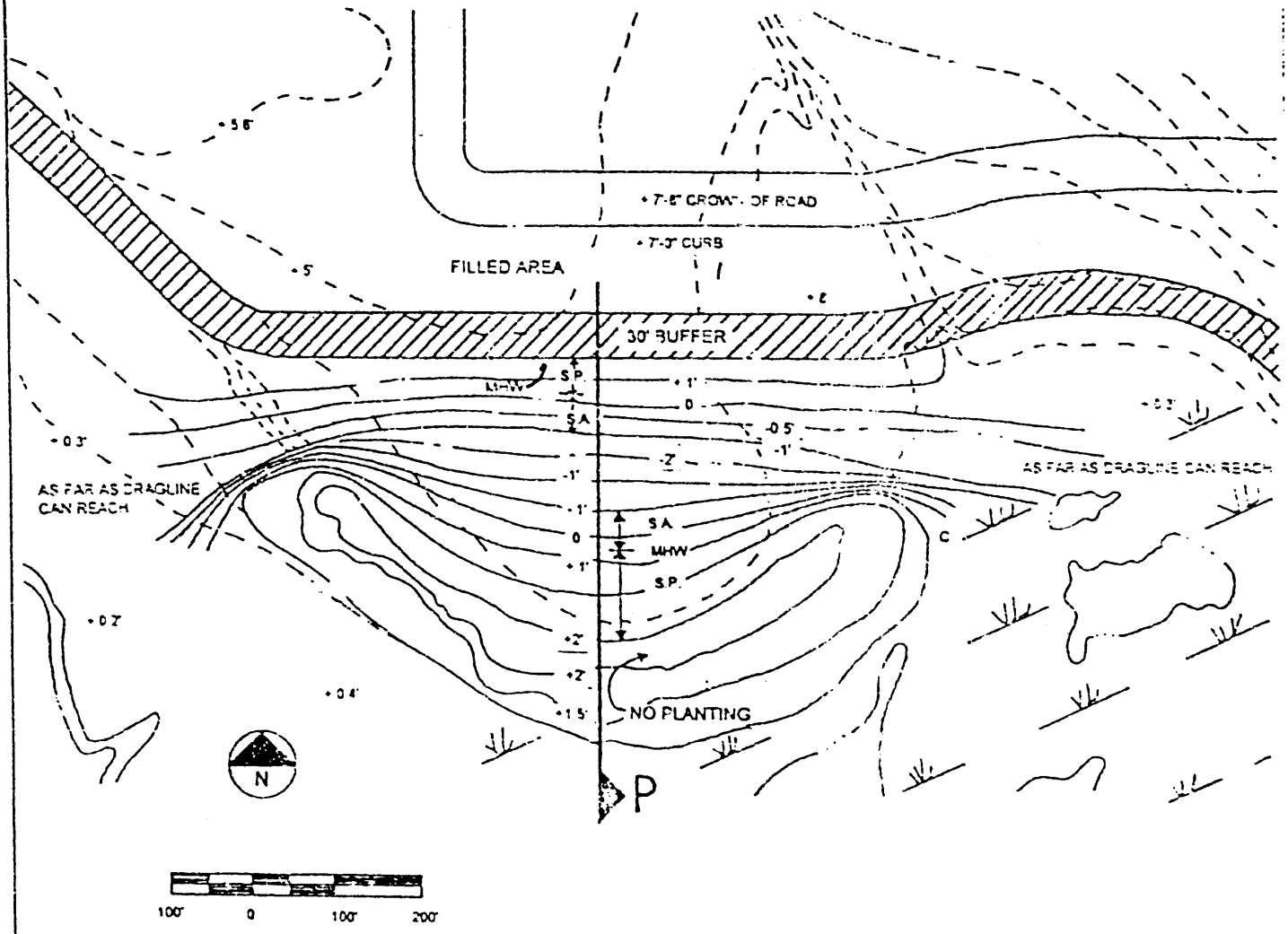
MASTER PLAN -Section Key

Between Moses Lake and Galveston Bay
at Texas City

County of Galveston State of Texas

February 10, 2004

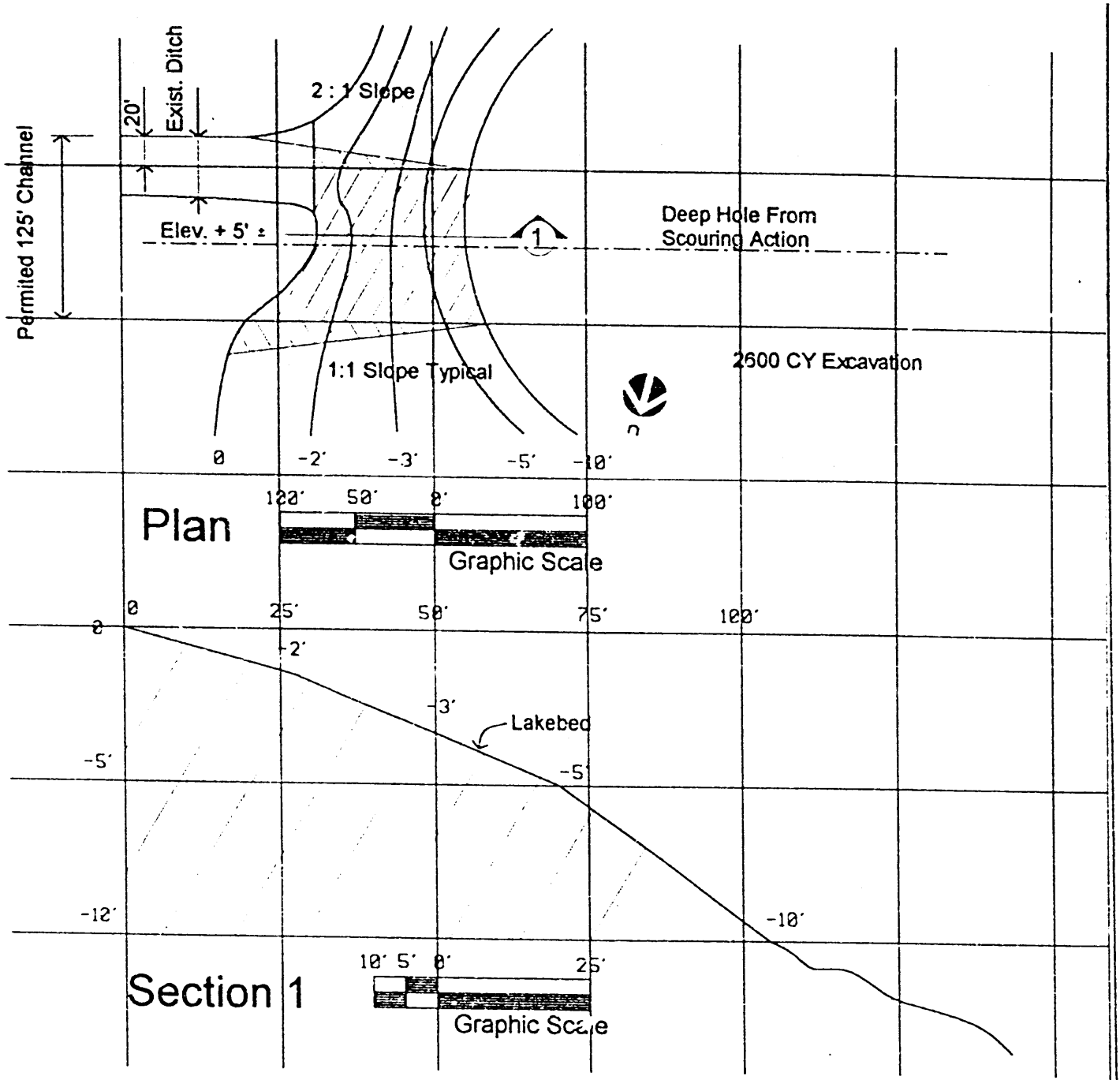
Page 5 of 37
Revised



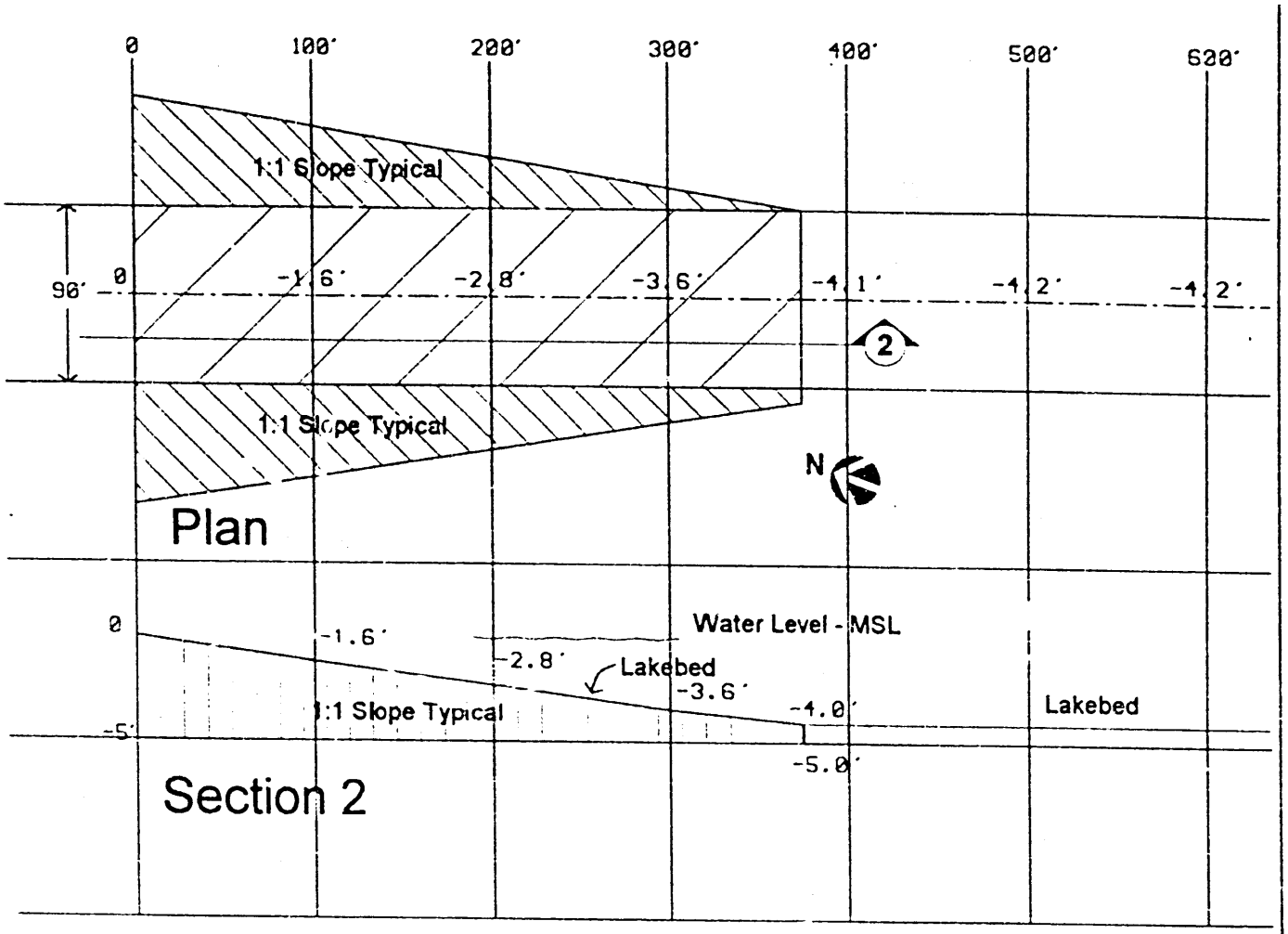
A - Plan of 7a Mitigation

Proposed Marina and Subdivisions
Between Moses Lake and Galveston Bay
at Texas City
County of Galveston State of Texas

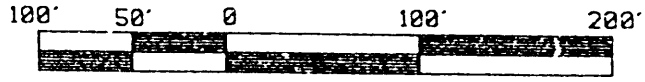
Existing Wetlands Not Disturbed



Channel Cut B-1

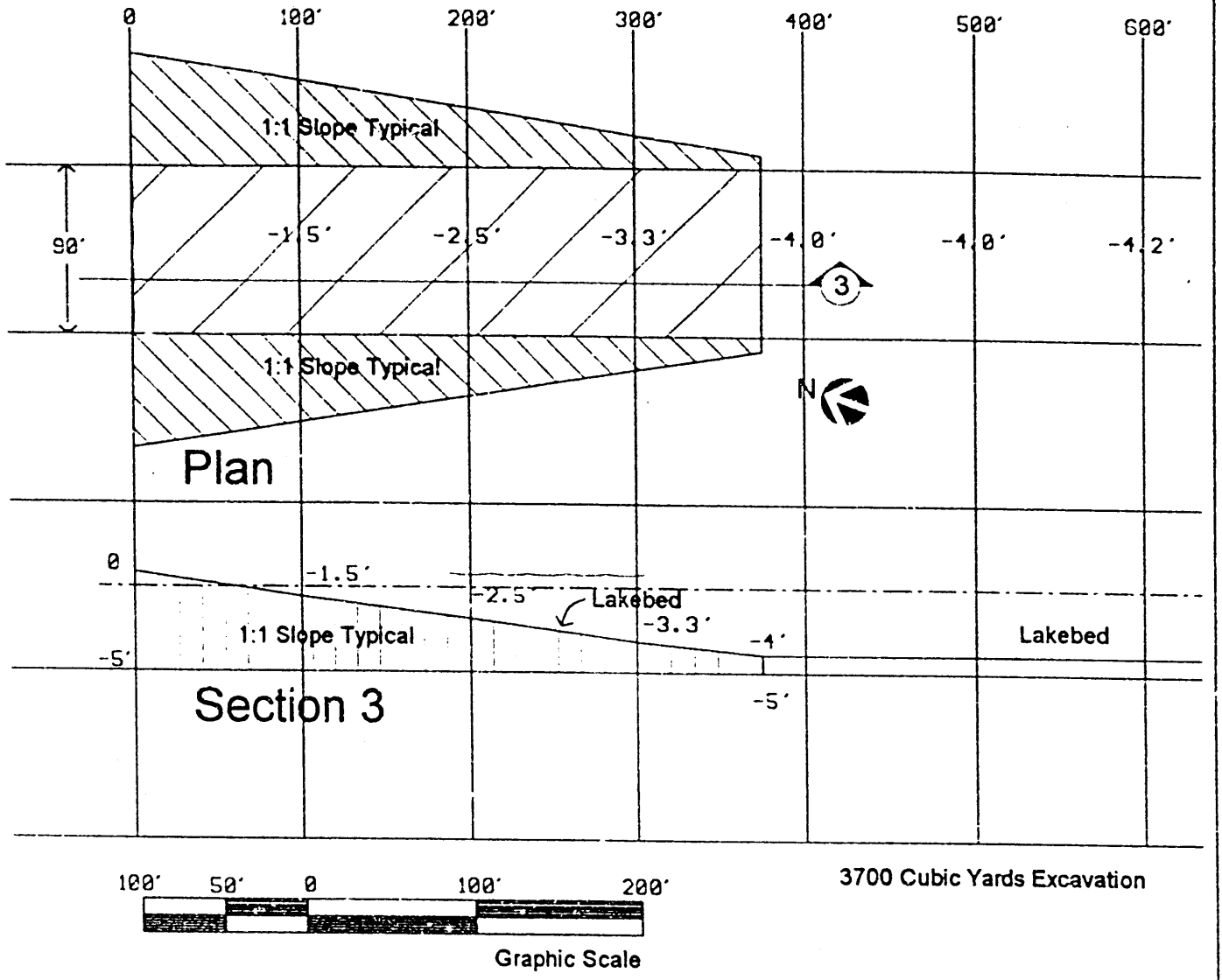


2500 Cubic Yards Excavation



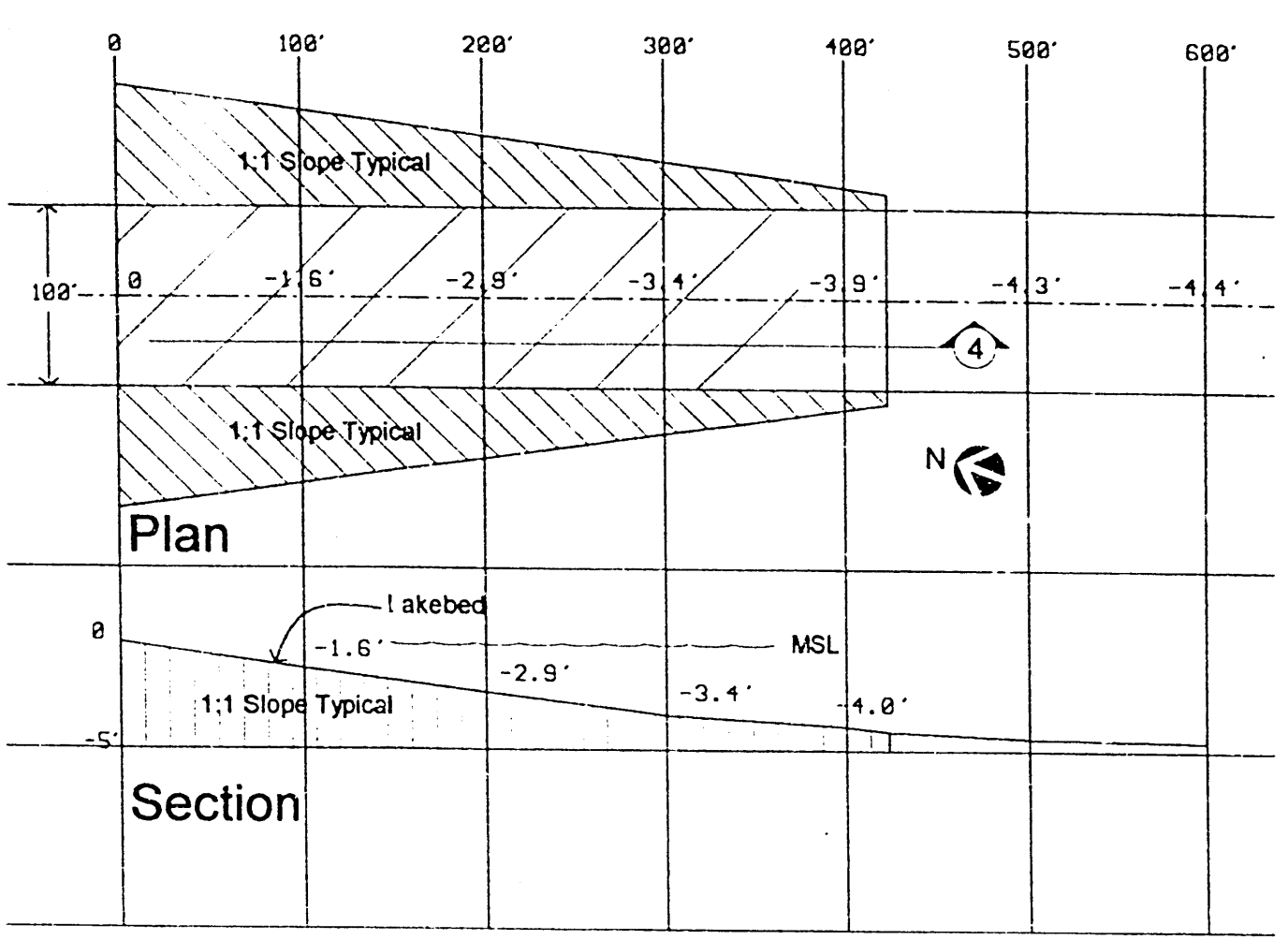
Graphic Scale

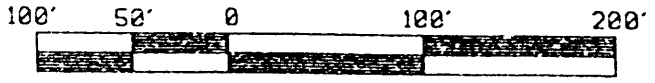
Channel Cut B-2



Channel Cut B-3

Proposed Marina and Subdivisions
Between Moses Lake and Galveston Bay
at Texas City
County of Galveston State of Texas



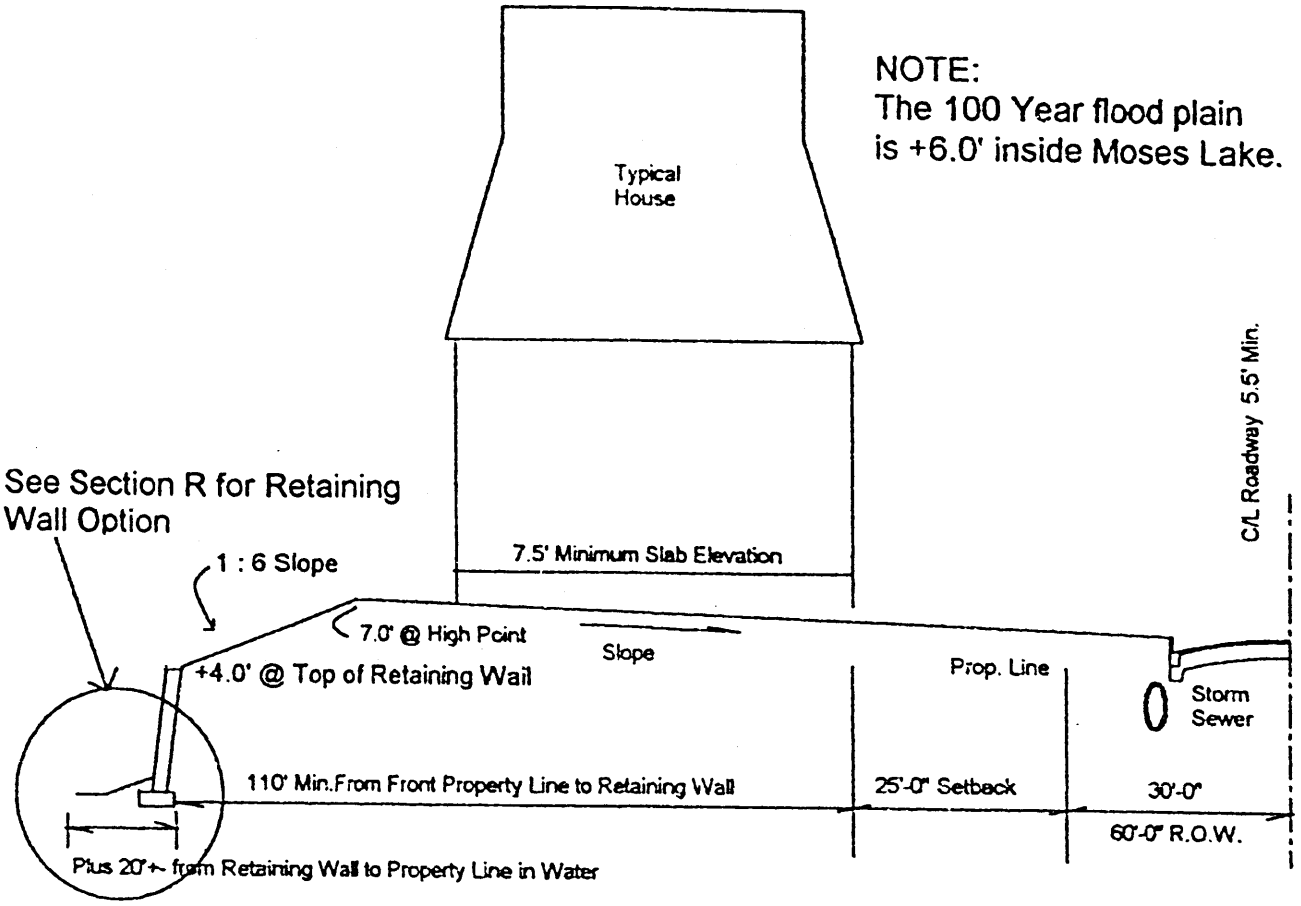


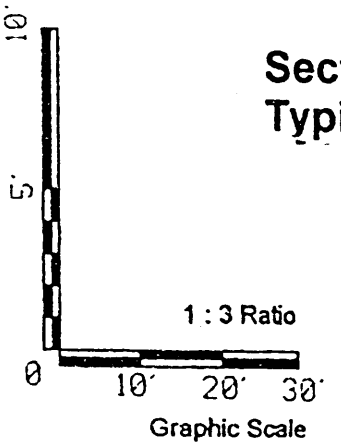
Graphic Scale

3800 Cubic Yards Excavation

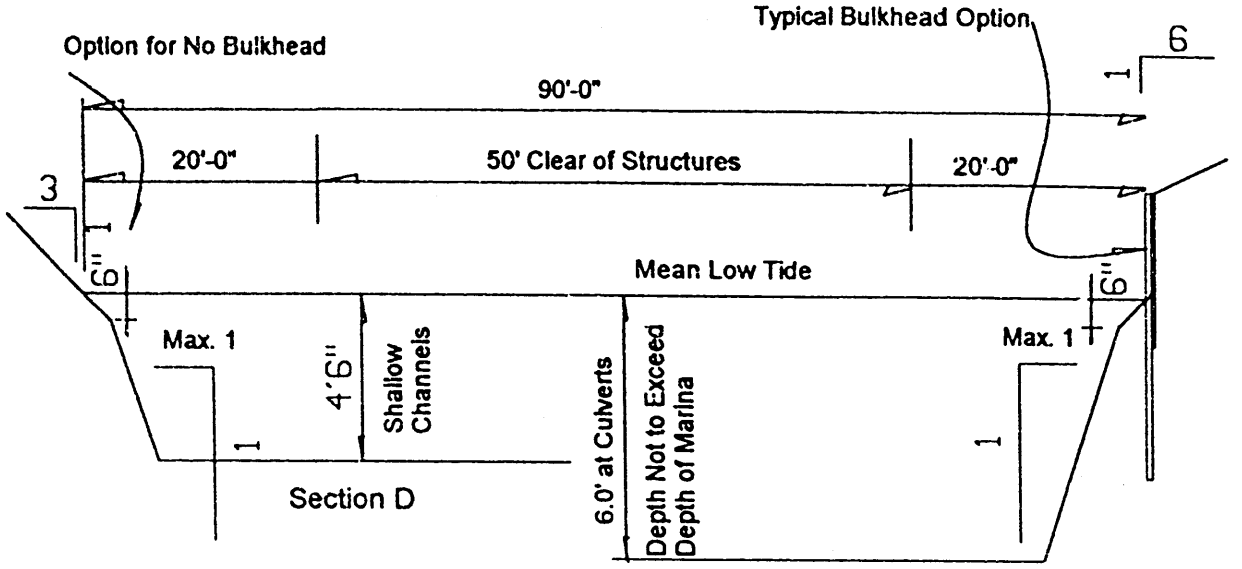
Channel Cut B-4

Proposed Marina and Subdivisions
Between Moses Lake and Galveston Bay
at Texas City
County of Galveston State of Texas

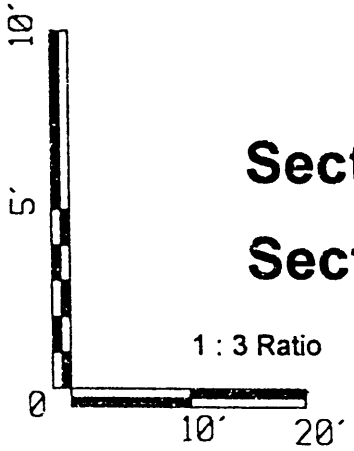




Section C – ½ Section Thru a Typical Channel Lot



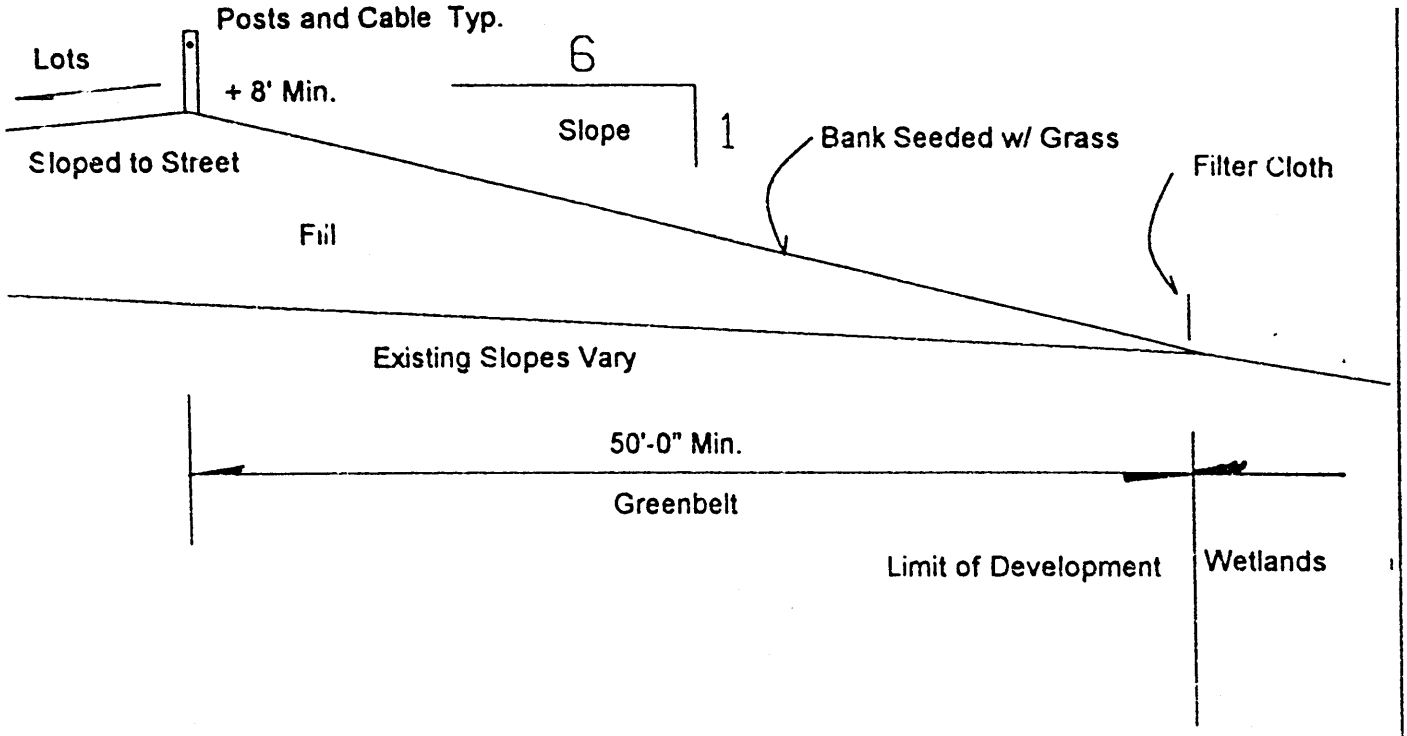
Section E



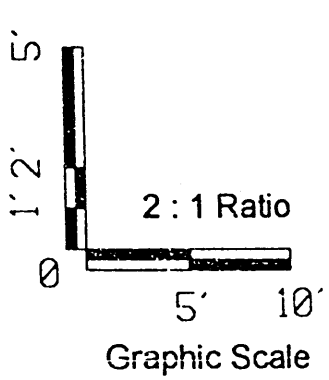
Graphic Scale

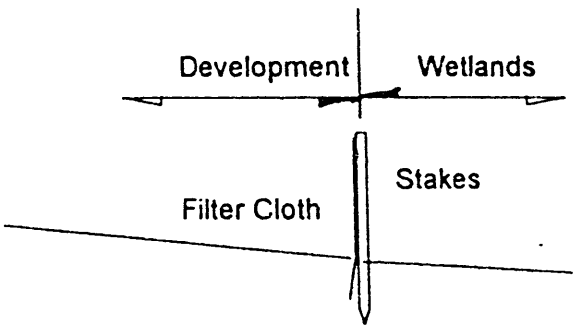
Section D - Shallow Channels

Section E - Deep Channels

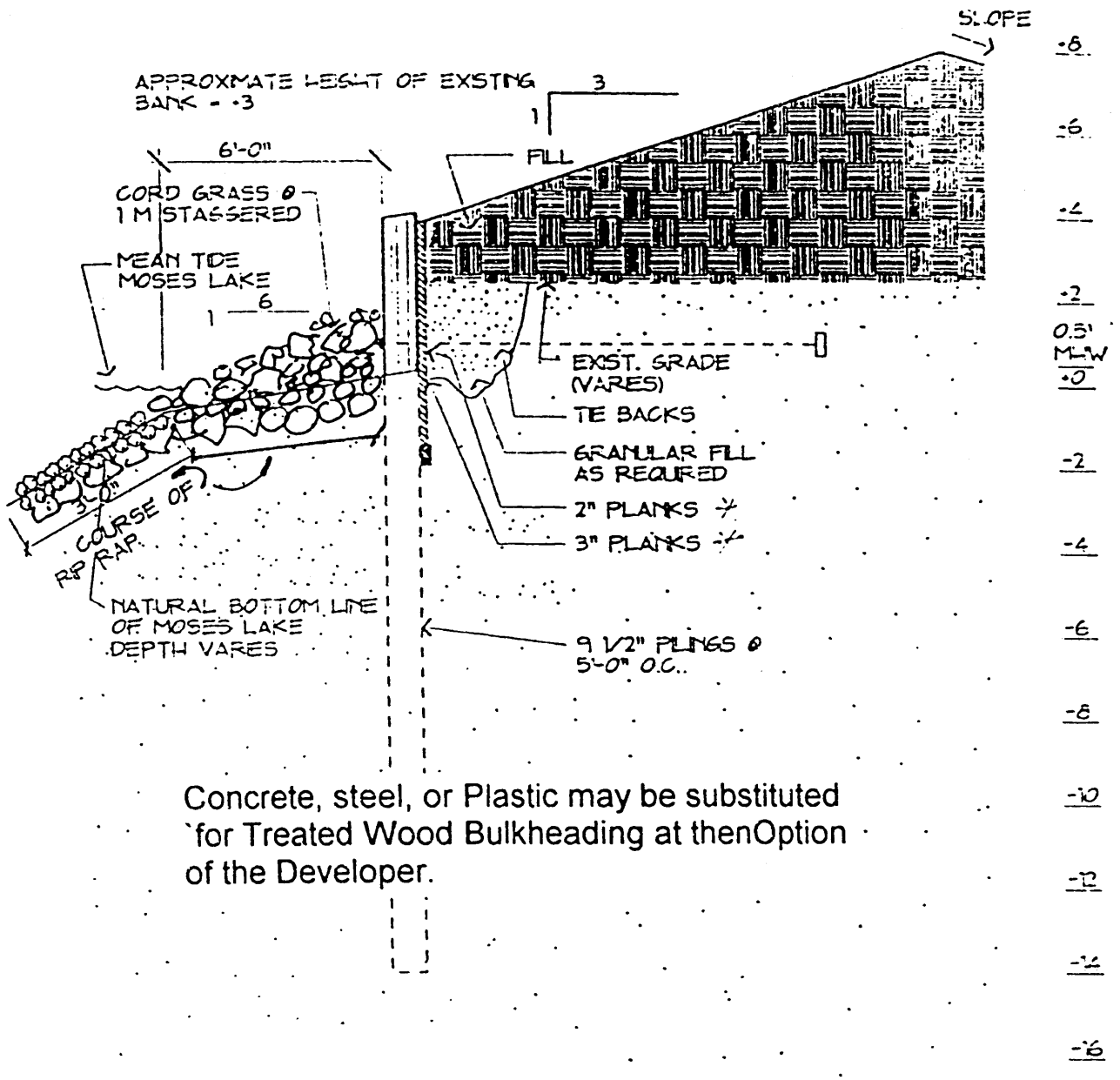


Section F - Sloped Bank at Greenbelt





Silt Containment Detail
(Not to Scale)

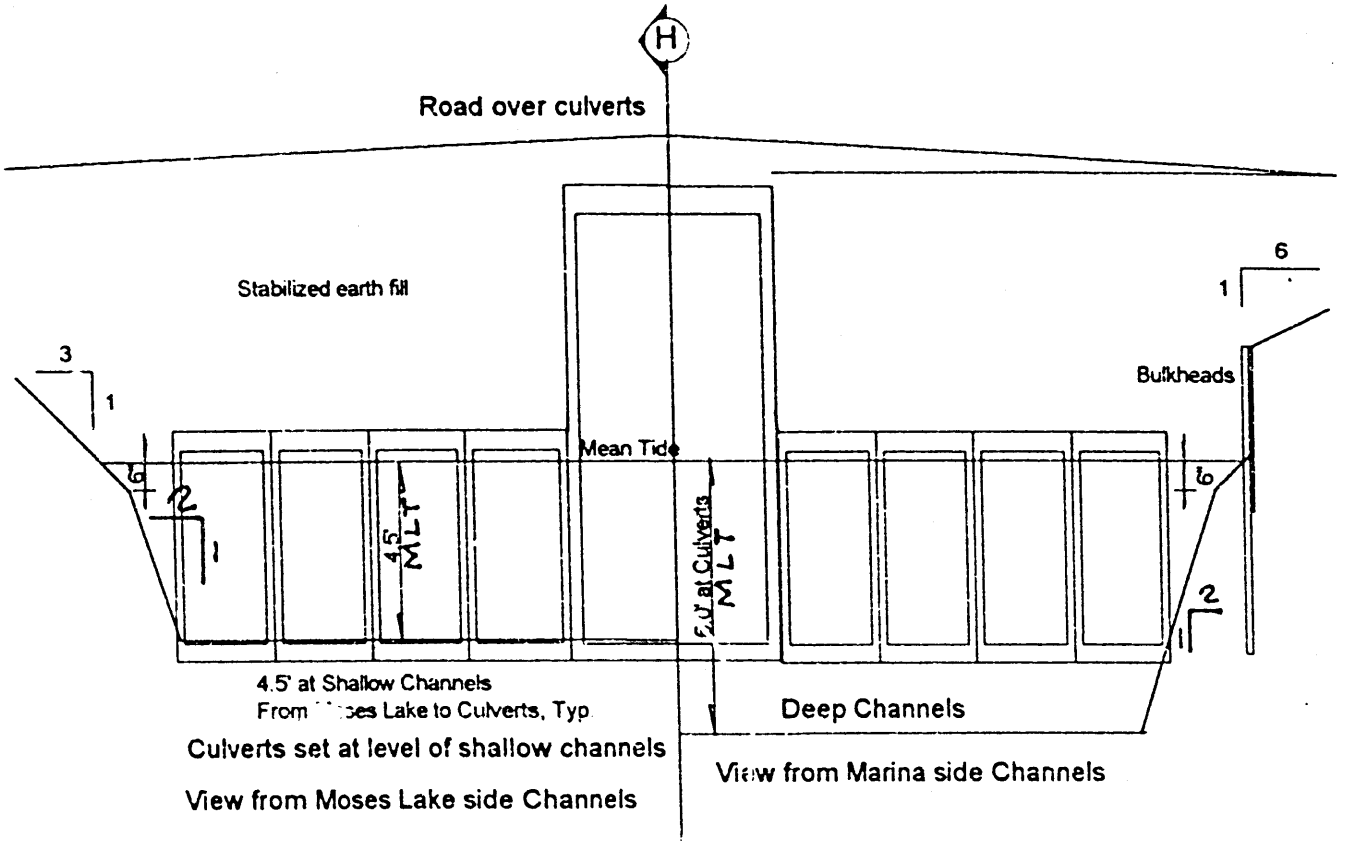


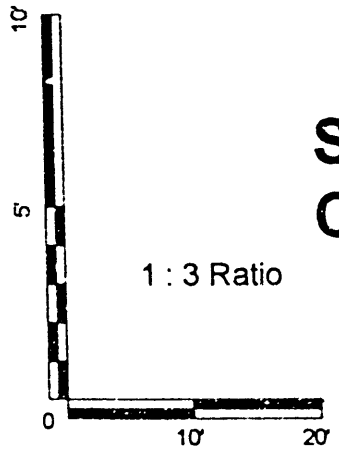
Concrete, steel, or Plastic may be substituted for Treated Wood Bulkheading at thenOption of the Developer.

SECTION G - EROSION CONTROL ON MOSES LAKE SIDE

0 2' 4' 6' 8' 10'

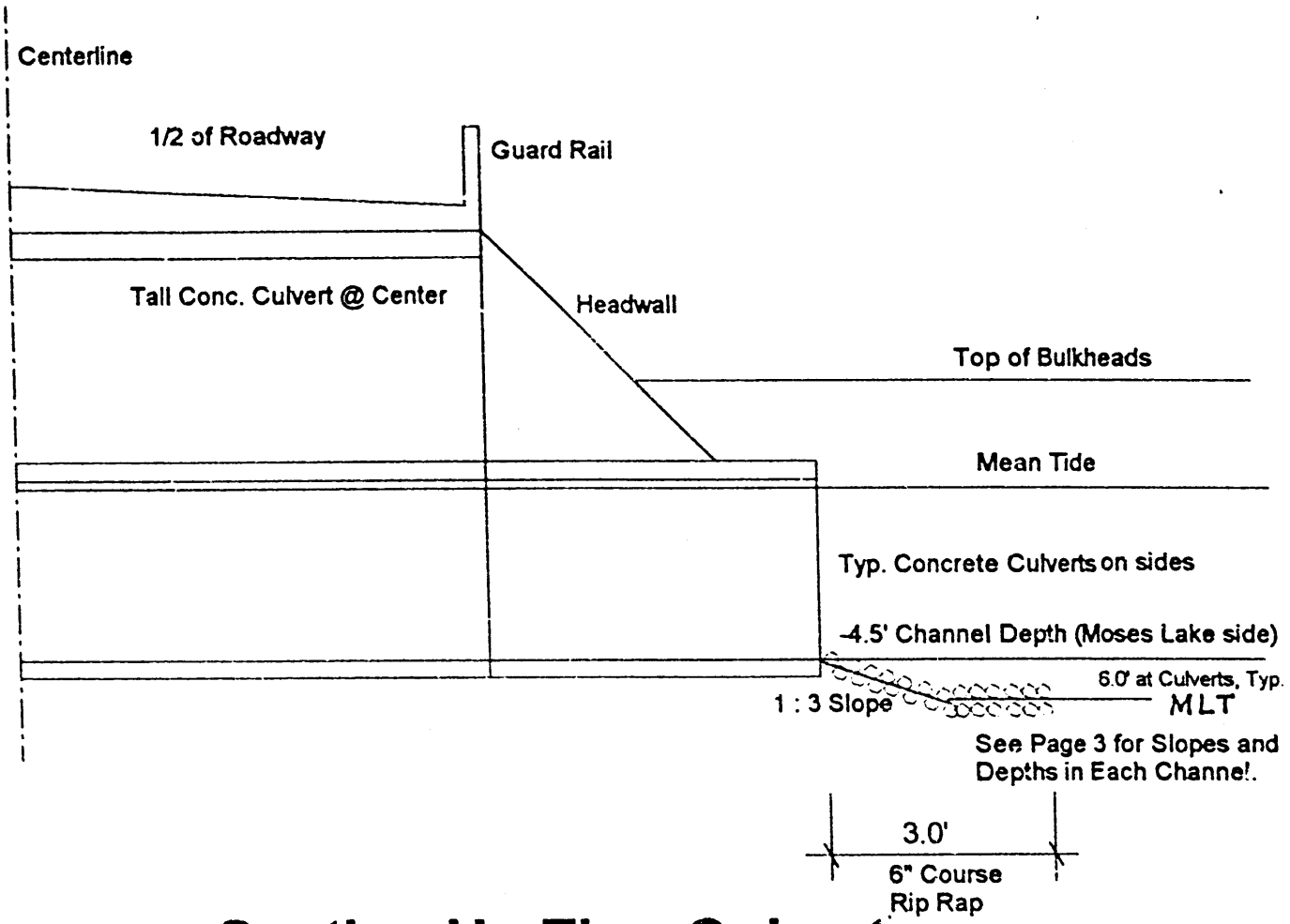
SCALE 1/4"=1'-0"





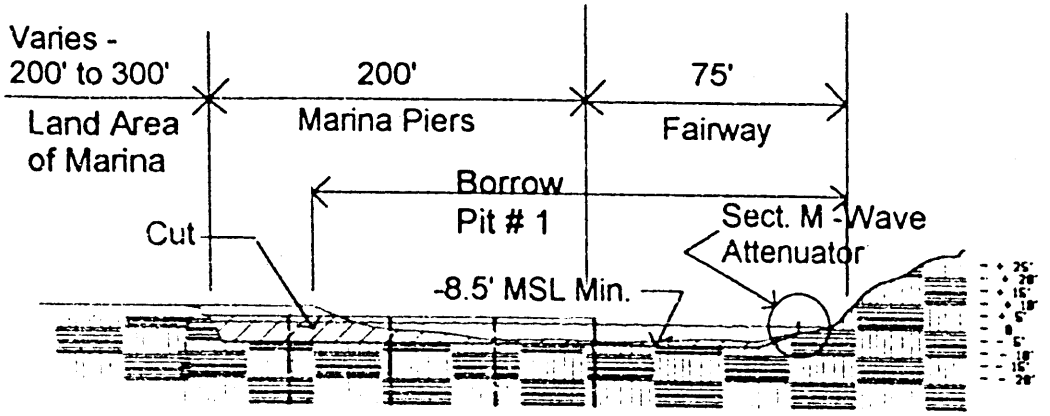
Section H - Culverts at Road Crossings (also change of channel depths)

1 : 3 Ratio



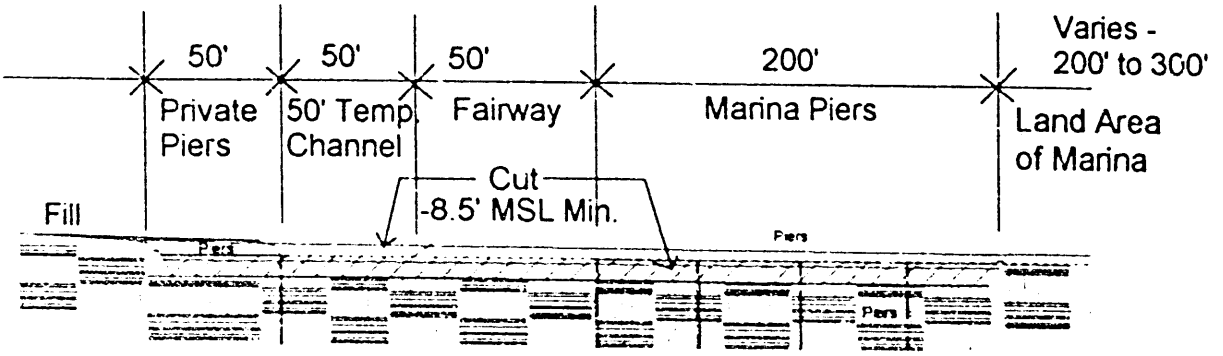
Section H - Thru Culverts and Road

(Not to Scale)



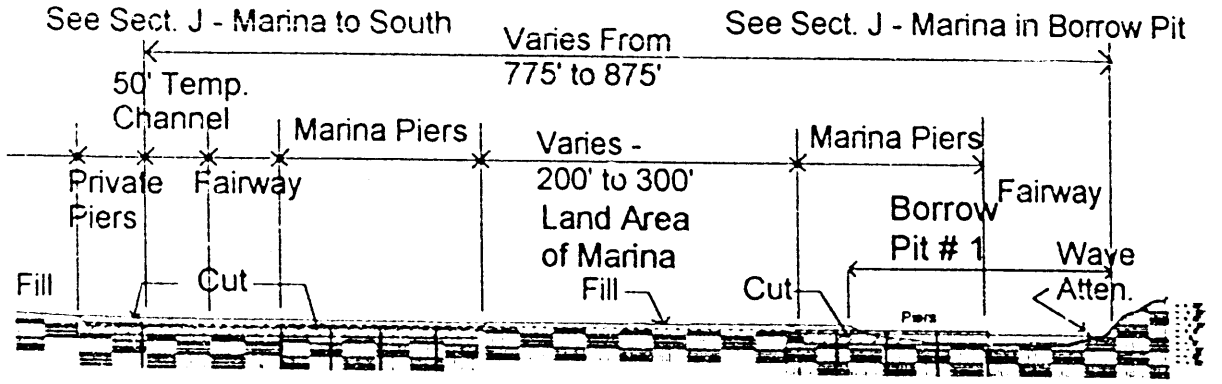
SECTION J - Marina in Borrow Pit

scale : exaggerated
in vertical dimension.



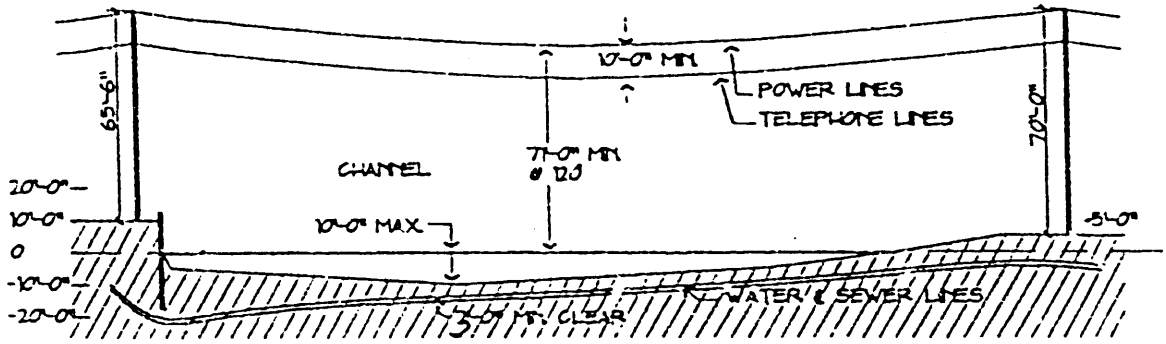
SECTION J - Marina to South

scale : exaggerated
in vertical dimension.



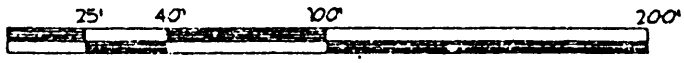
SECTION J - Marina Area Profile

scale : exaggerated
in vertical dimension.

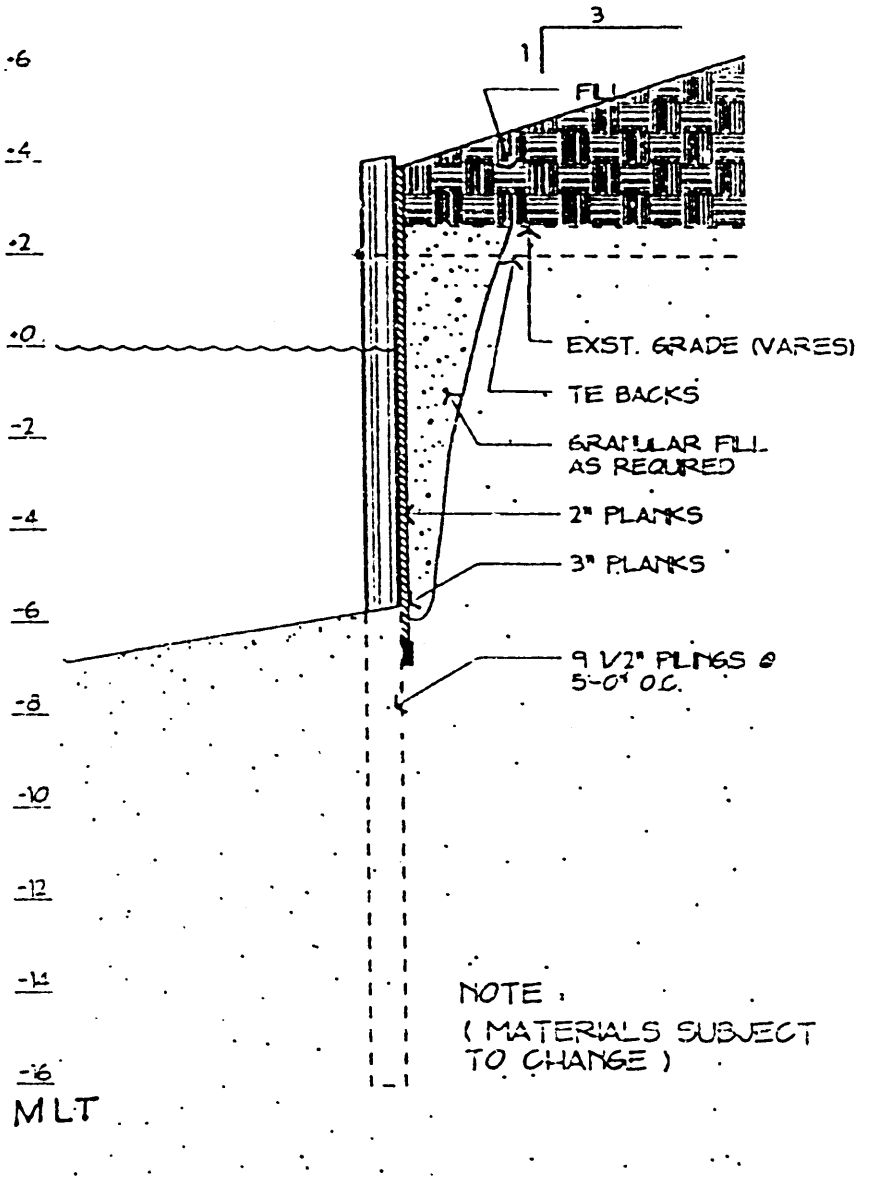


NOTE - CONTROLLING DEPTH IS THE MOSES LAKE TIDE GAUGE AT -50'-0" MHW

SECTION K - UTILITIES CROSSING PROFILE @ MARINA ENTRY CHANNEL



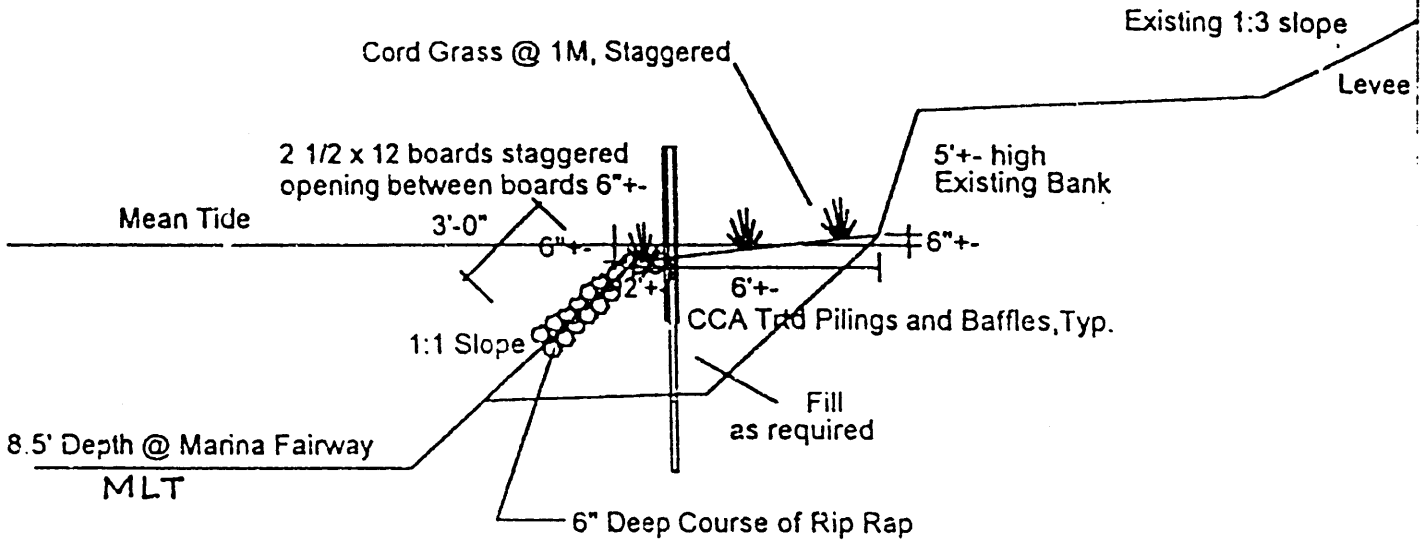
SCALE 1"=60'



SECTION L - WOOD PILES & BOARD BULKHEADING

0 2' 4' 6' 8' 10'

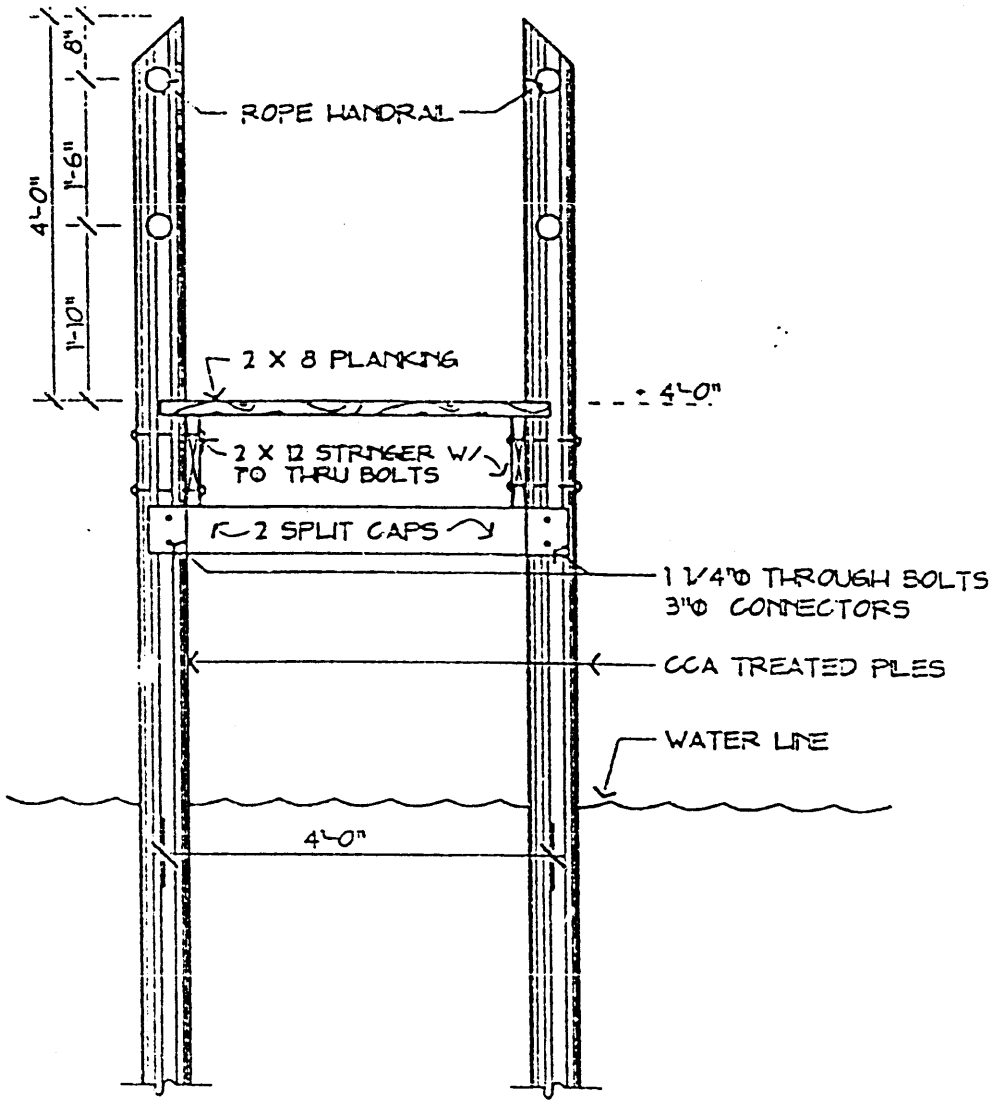
SCALE 1/4"=1'-0"



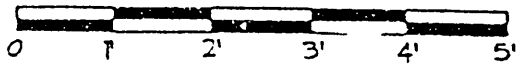
Section M - Water Baffles at Marina/Levee Interface

(Not to Scale)

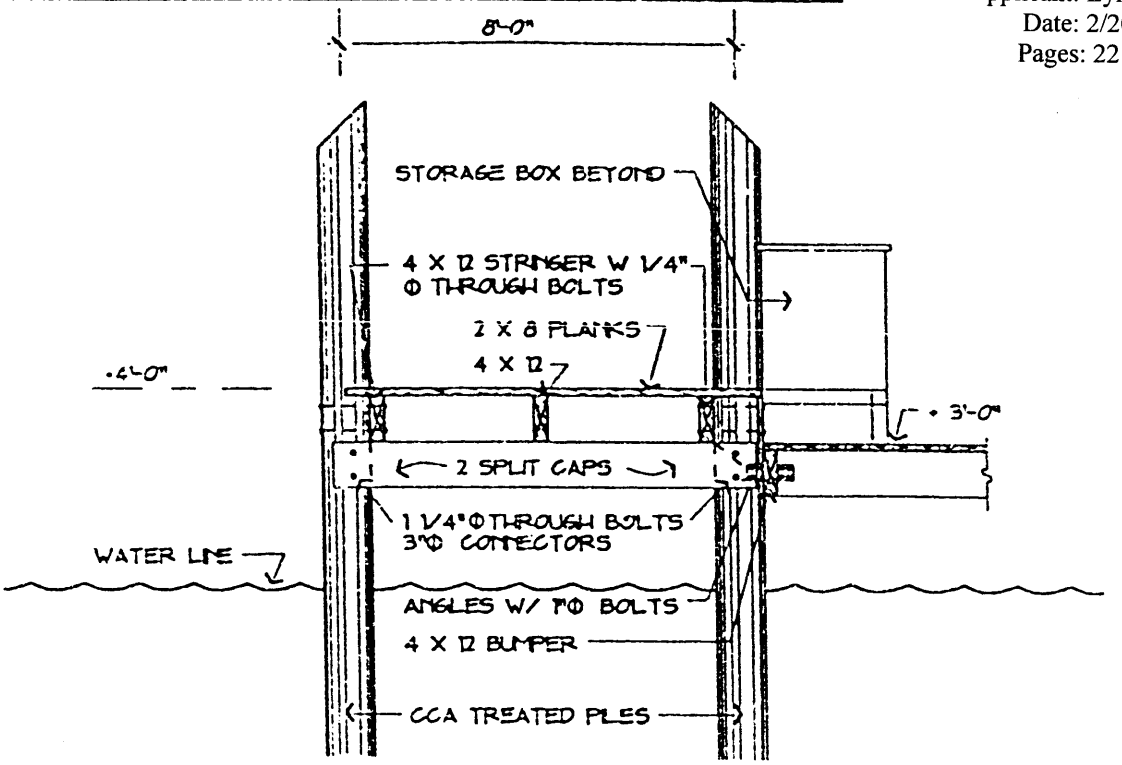
Approx. 1/2 of Marina in the
Existing Borrow Pit



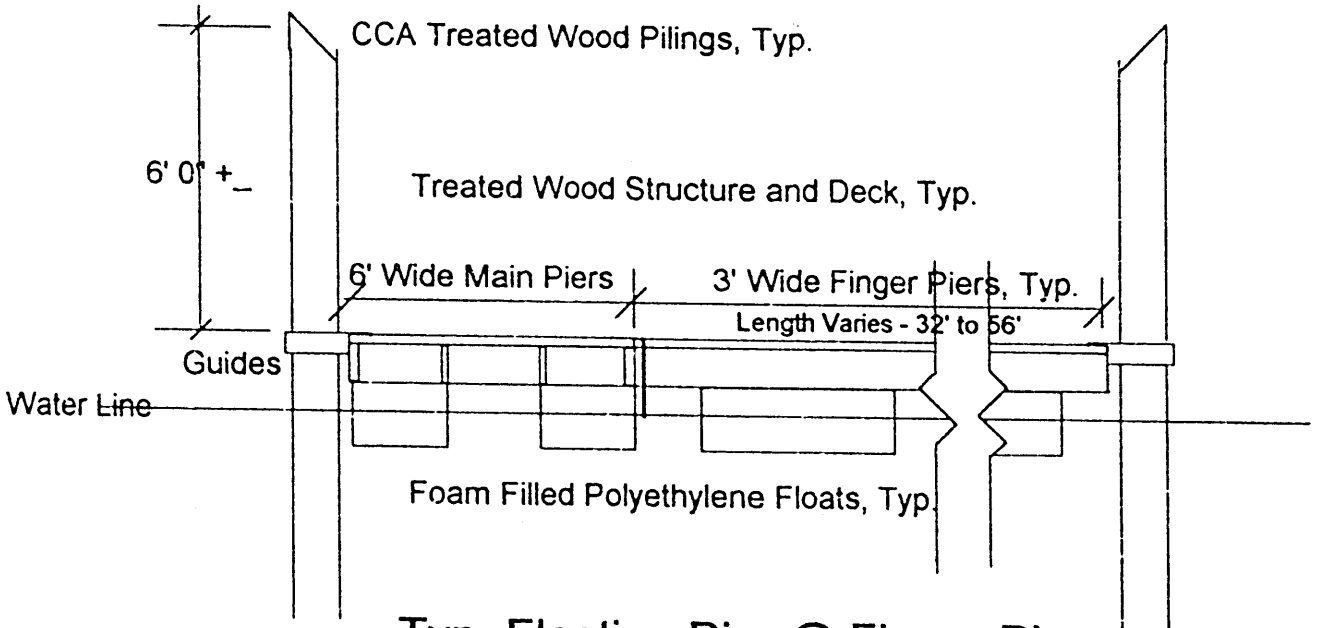
SECTION N - SECTION THROUGH BOARDWALK



SCALE 1/2"=1'-0"



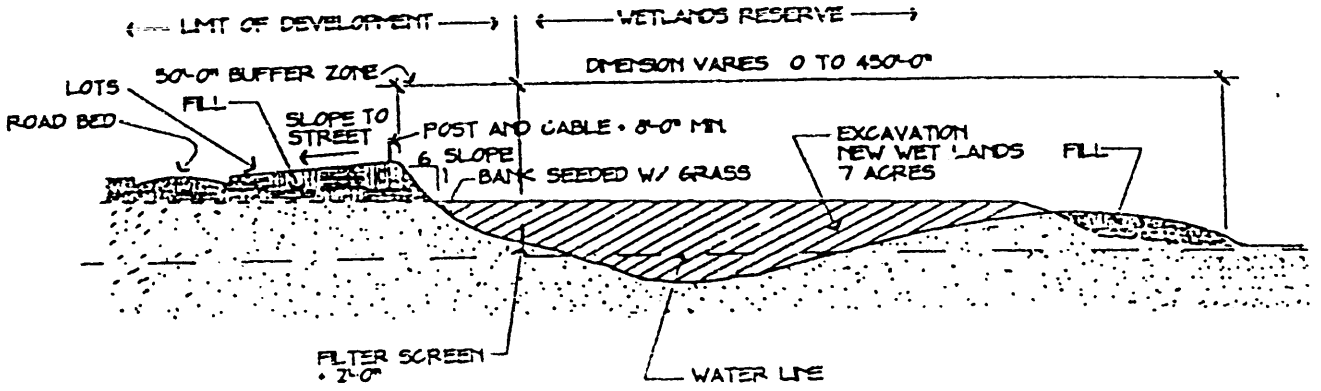
Typ. Fixed Pier @ Finger Pier



Typ. Floating Pier @ Finger Pier

SECTION O - Pier Options

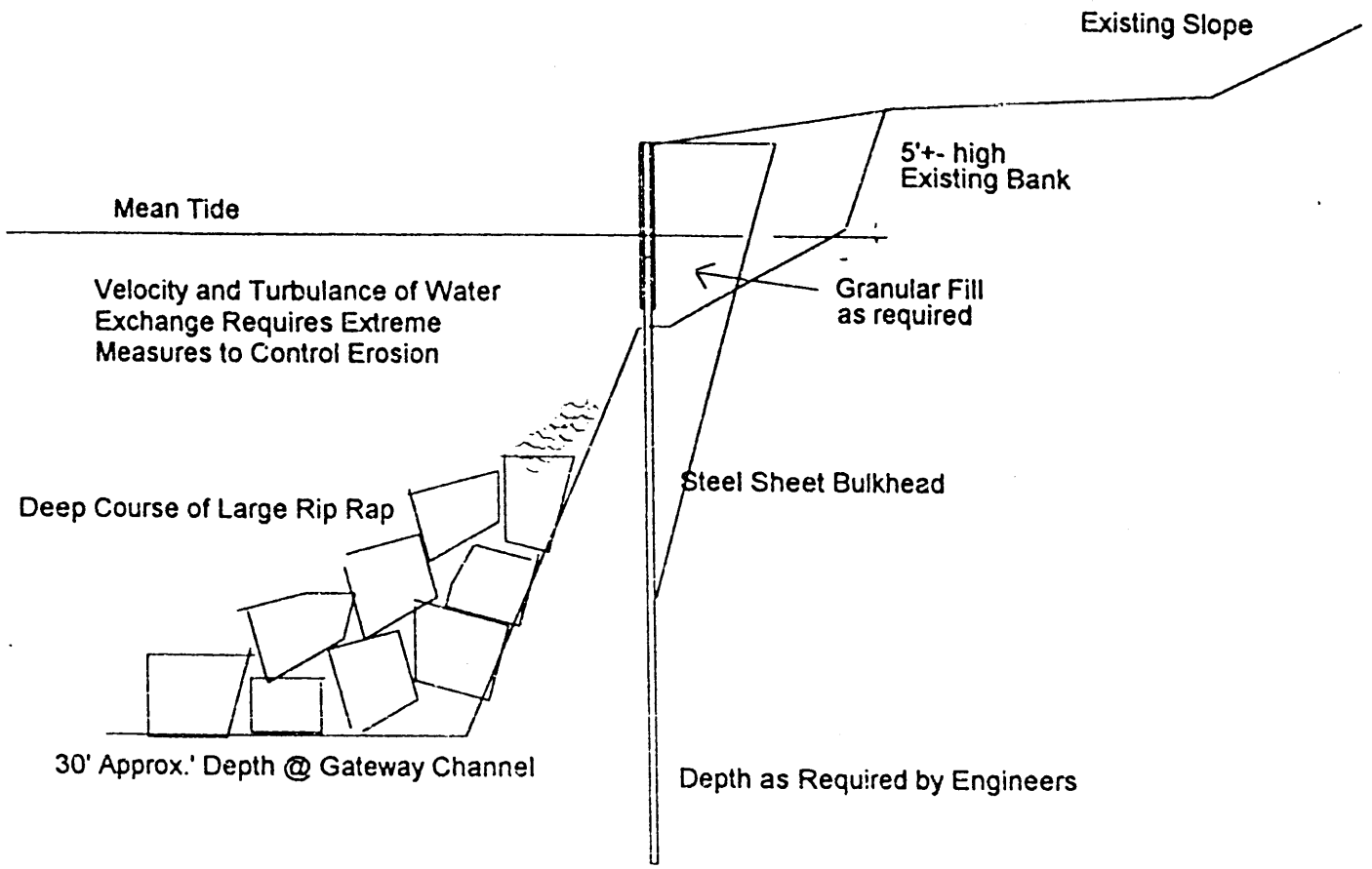
0 2' 4' 6' 8' 10'



GRAPHIC SCALE
RATIO = 5 : 1

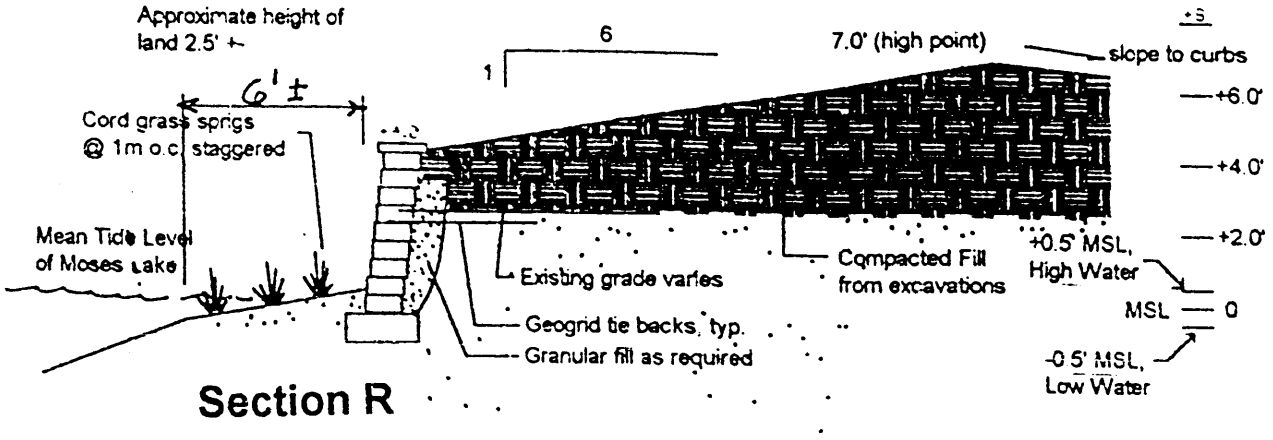
SECTION P - CROSS SECTION THRU WETLANDS CONSTRUCTION

SCALE : EXAGGERATED IN VERTICAL DIMENSION



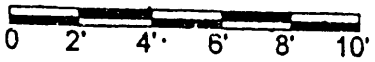
Section Q - Steel Sheet Bulkhead @ Gateway Channel

(Not to Scale)



Section R

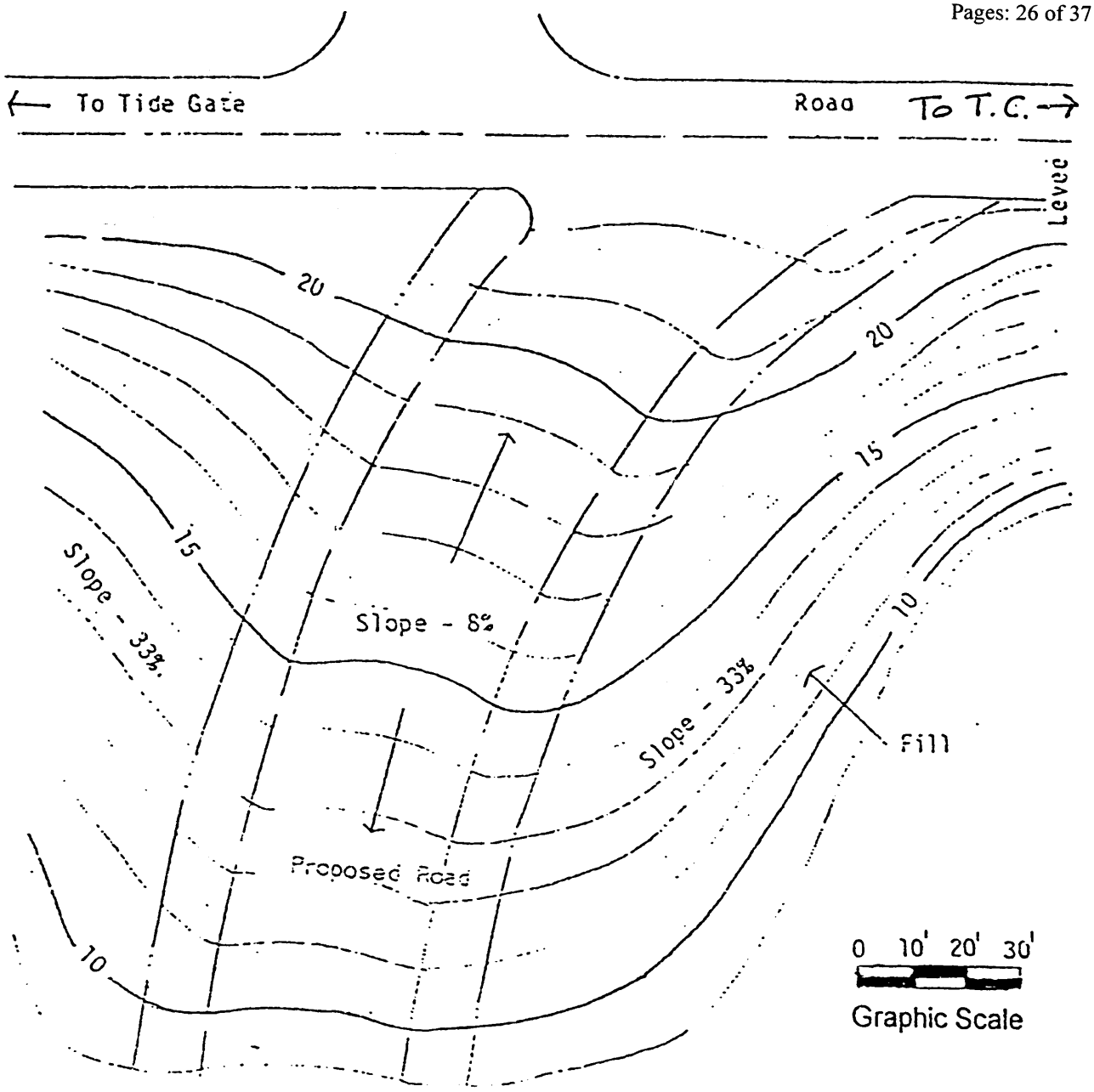
Retaining Wall Option in Lieu of Section L - Wood Bulkheads



Graphic Scale

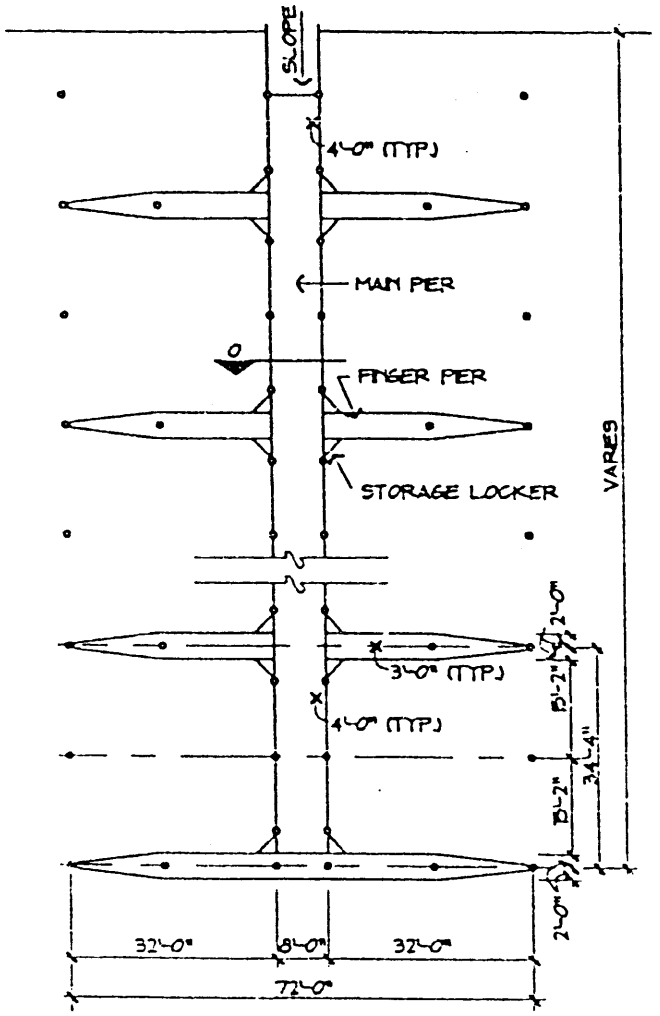
Section R – Retaining Wall Option

Proposed Marina and Subdivisions
Between Moses Lake and Galveston Bay
at Texas City
County of Galveston State of Texas

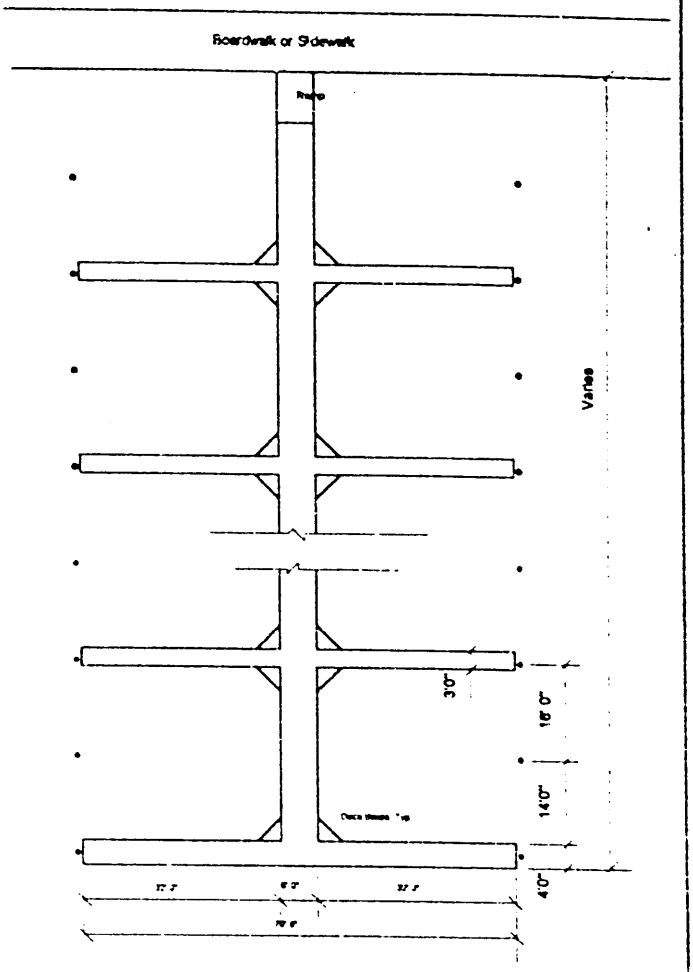


Z - Proposed Ramp off Levee

Proposed Marina and Subdivisions
Between Moses Lake and Galveston Bay
at Texas City
County of Galveston State of Texas

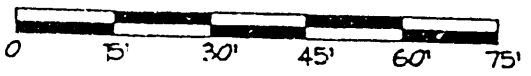


Fixed
Pier Option

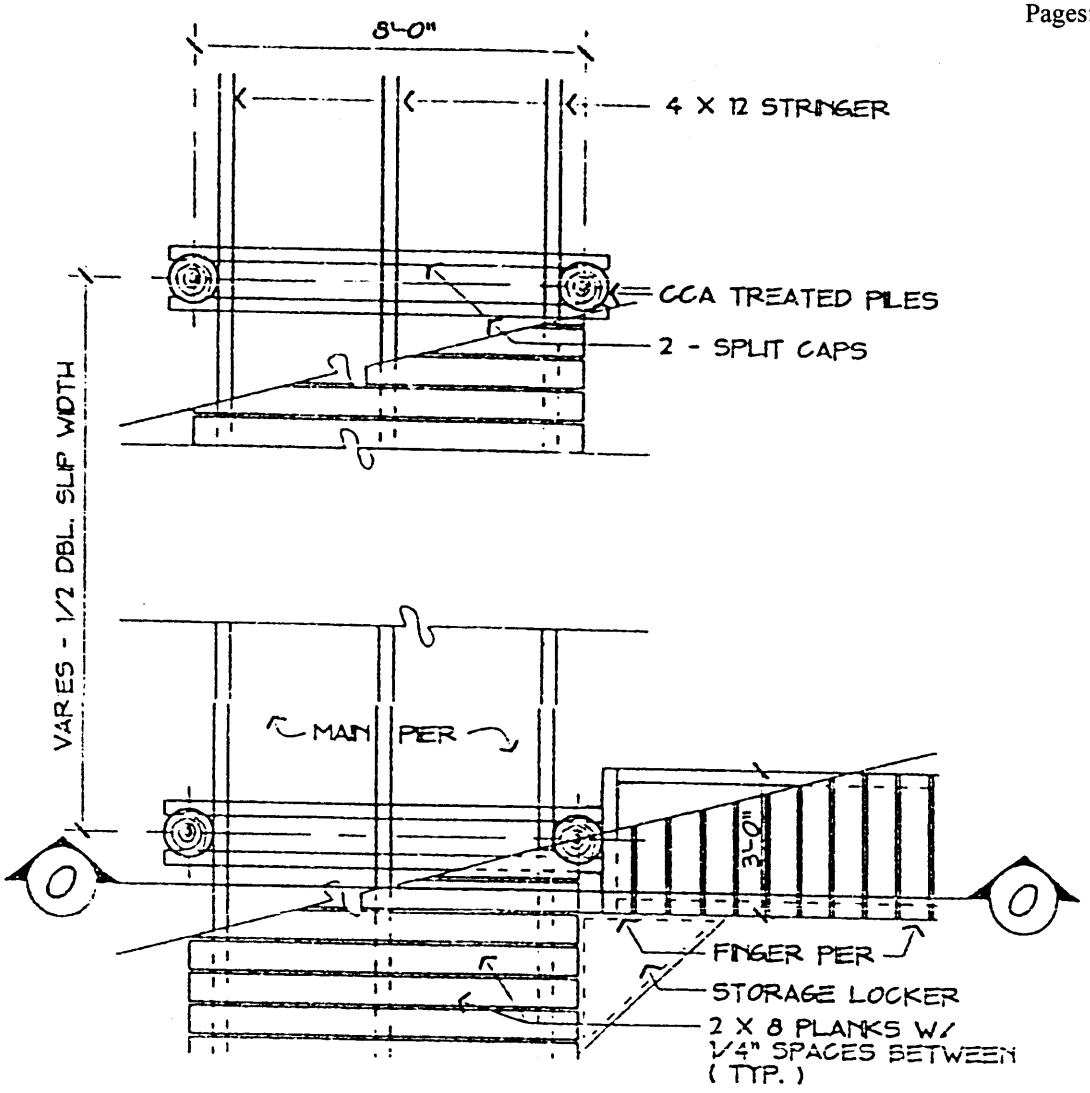


Floating Pier
Option

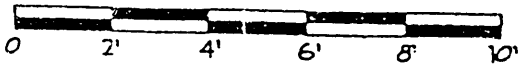
Plan View of Typical Boat Slips



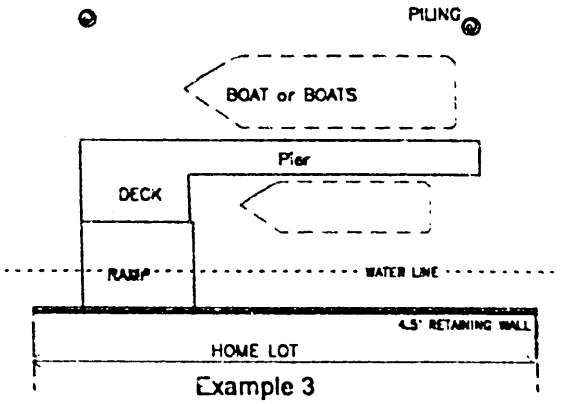
Proposed Marina and Subdivisions
Between Moses Lake and Galveston Bay
at Texas City
County of Galveston State of Texas



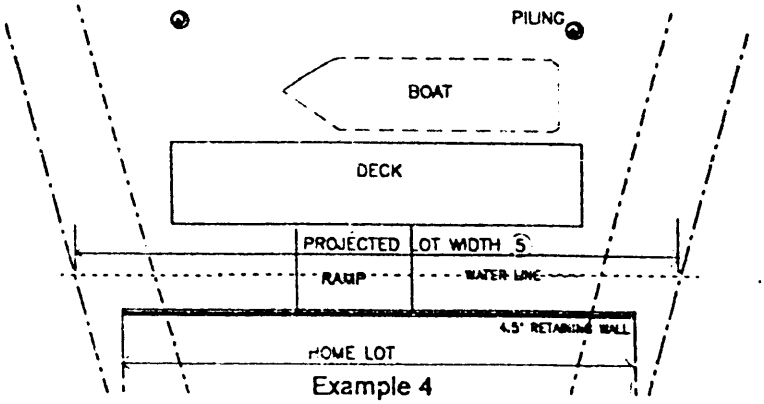
PLAN OF MAIN PIER & FINGER PIER CONECTION



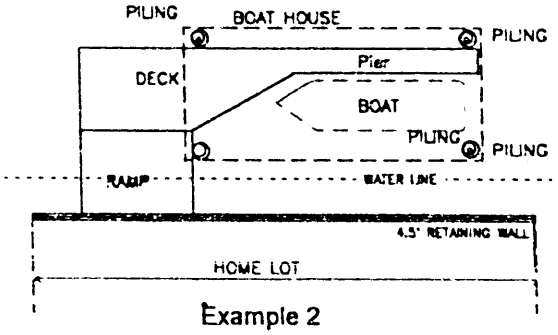
SCALE 1/4"=1'-0"



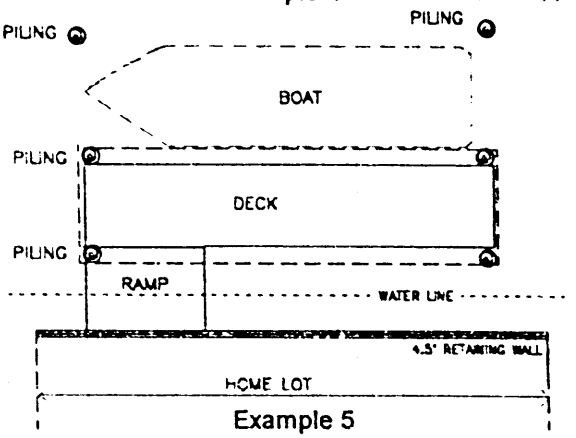
Example 3



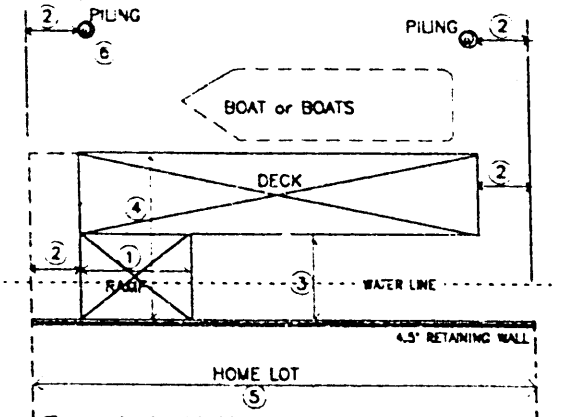
Example 4



Example 2



Example 5



Example 1 with Keys to Design Parameters

Typical Design Parameters to be Incorporated into the Subdivision Restrictions

1 Ramp may not exceed 8'0" width

2 Side clearance may not be less than 10% of lot width

3 Deck may not be less than 10' from retaining wall

4 Projection into channel may not exceed 20'

5 Lot widths vary. Lot lines project into channels at odd shaped lots

6 Pilings for mooring boats may be located beyond 20' limit line

7 Total area of ramp plus decks and piers may not exceed 50% of projected lot width (measured at the water line) times 10 feet.

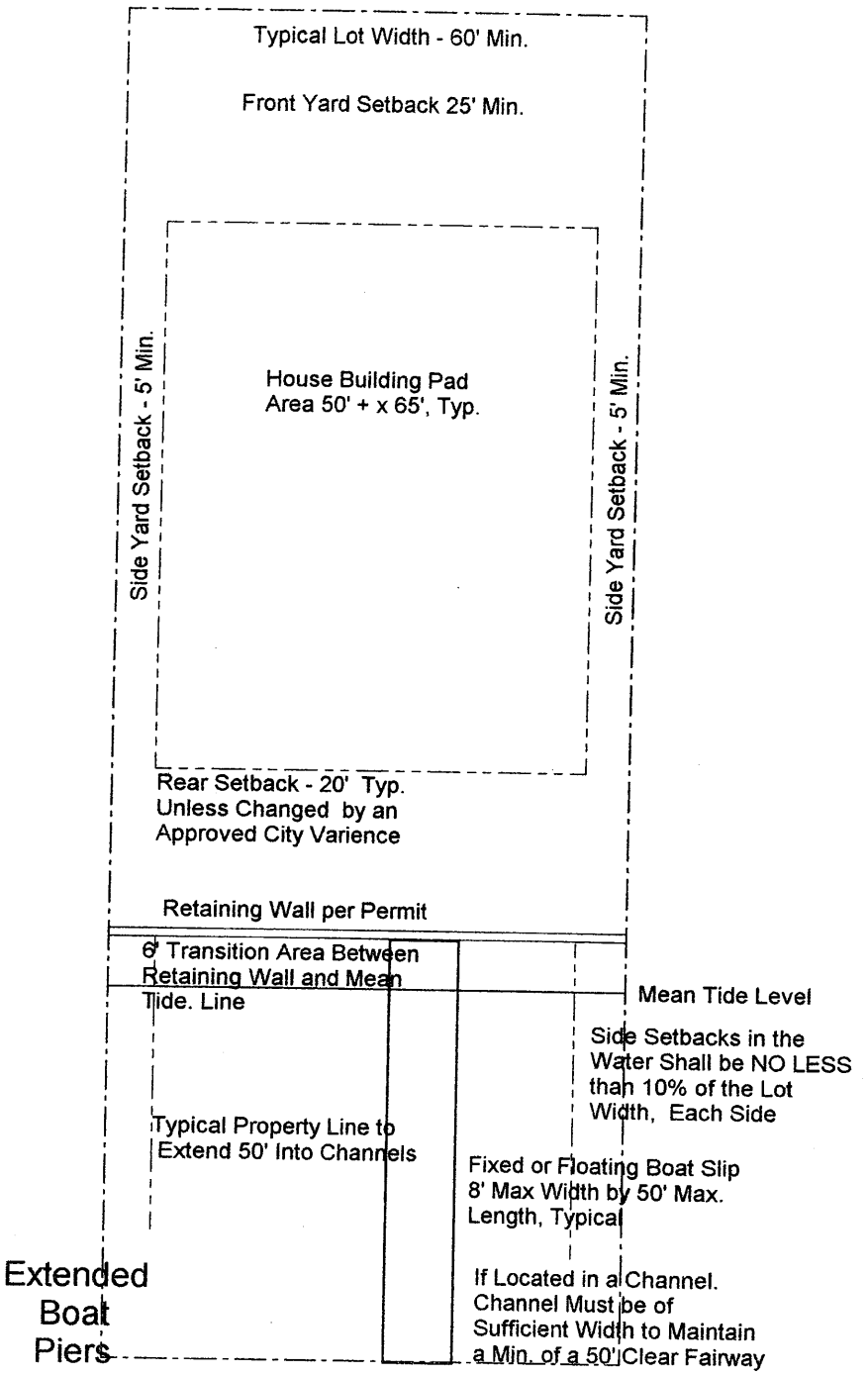
Example Lot width = 60' times 10' = 600 sq ft maximum area

Lot width = 80' times 10' = 800 sq ft maximum area

Residential Pier Examples

Proposed Marina and Subdivisions
Between Moses Lake and Galveston Bay
at Texas City
County of Galveston State of Texas

Typ. 30' Street
in 60' R.O.W.

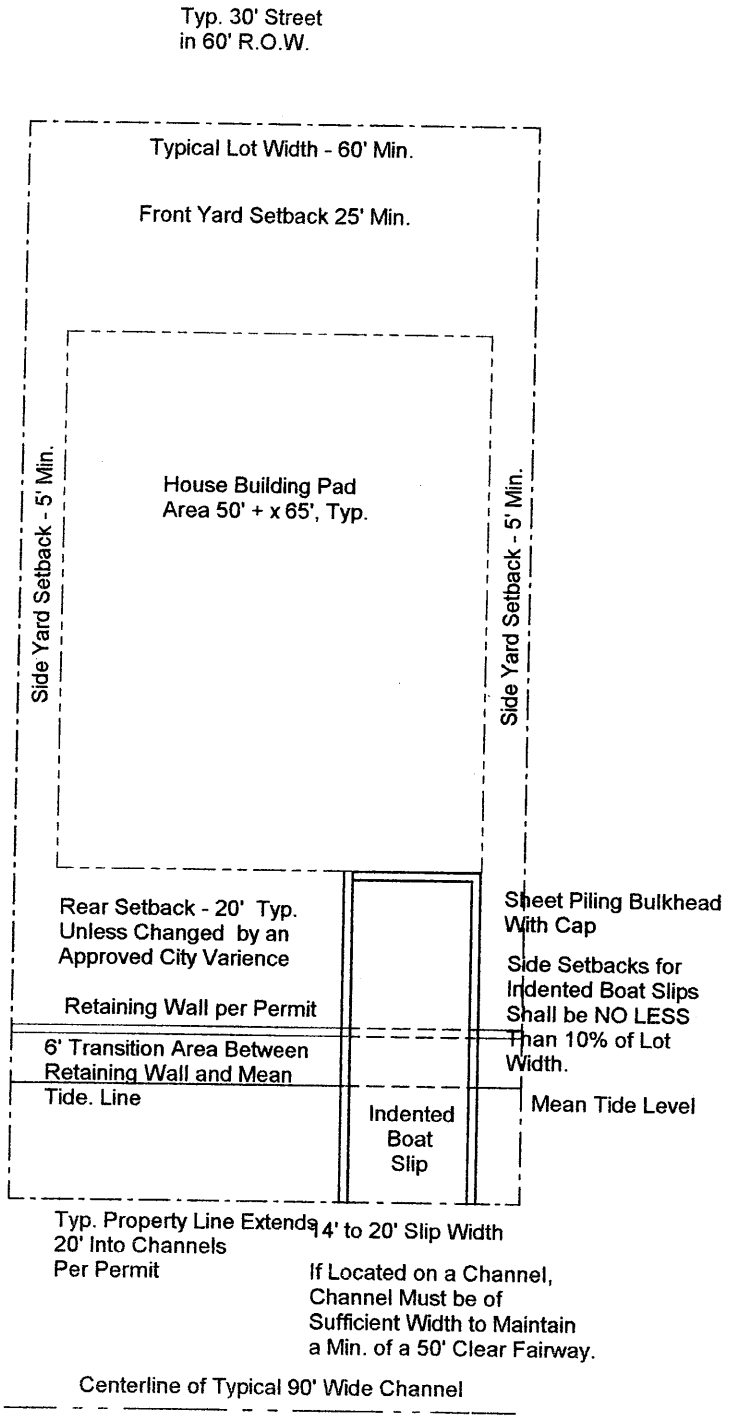


Proposed Marina and Subdivisions

Between Moses Lake and Galveston Bay
at Texas City

County of Galveston **State of Texas**

February 10, 2004



Indented
Boat
Slip

Proposed Marina and Subdivisions

Between Moses Lake and Galveston Bay
at Texas City

County of Galveston **State of Texas**

BAY LAKE MARINA AND SUBDIVISIONS
REVISIONS IN SCOPE FROM THE PREVIOUS PERMIT EXTENSION

March 7. 2000

All permit drawings have been updated to include just the pertinent items for this Permit. Previous Mitigations and comments have, also, been consolidated in an attempt to simplify the permit file handling.

Borrow Pit # 1 will be filled at the west end

Borrow Pit # 2 will be connected into the marina or channel systems when Channels 'D' and 'E' are dug.

Borrow Pit # 3 will be deleted from the permit.

A 50 foot wide bypass channel from the north end of Channel 'B' to Moses Lake is proposed to provide for the circulation of water and boat traffic from Channel 'B', if the marina is not dug first.

If the Marina or a bypass channel is not dug prior to channels D and E, the maximum depth of channels shall not exceed -6.0 feet. Channels may be deepened to indicate depths when the marina or the bypass channel is dug to -8.5 feet.

Channel Depths were reduced to 4.5 feet below MLT in the Channels from Moses Lake to the road crossings. Channel depths from the road crossing culverts to the Marina are -6.0' maximum depth at the culvert and have slopes and/or depths as indicated on Page 3.

There is, as close as possible, a 0 discharge of runoff water from the project into wetlands. This is accomplished by maintaining a continuous high point at the top of the dedicated 50' Greenbelt between the wetlands and the developed areas. Runoff water from rains is taken from developed areas in storm drains at streets to discharge points in Moses Lake. Runoff water into the channels and Marina is minimized by the storm drains. During construction, filter cloth barriers will be placed and maintained between the Greenbelt and the wetlands to prevent silty runoff from entering wetlands areas until grasses are established on the slopes.

GENERAL NOTES

SITEWORK

January 19. 2000

The property has been surveyed by the Galveston County Surveyor to determine the MHW Line (Private Property Line) along all shore line and marsh area.

A wetlands delineation to establish the true boundary between wetlands and uplands will be made and approved by the U S Army Corps of Engineers prior to the beginning of any work in the adjacent areas.

Work is indicated to start where delineated. Field conditions will vary as follows:

Work will not be done below the wetlands delineation boundary, unless otherwise indicated, except the permitted boardwalk, filling at the west end of borrow pit #1 and the previously permitted area to be mitigated.

Surveyors will determine the Mean Tide level point from U S Coastal Geodetic Bench Marks. The Mean Low Tide level for this project will be 18" below the Mean Tide level.

CUT AND FILL

No spoil will be placed into Borrow Pits, Moses Lake or Galveston Bay, except at the west end of borrow pit #1..

Cut will be used as fill to raise the existing uplands grades higher, unless otherwise indicated.

Surplus material, if any, will be disposed of on other sites.

Revised channels and proposed channels will not penetrate or disturb existing unmitigated wetlands.

MAINTENANCE

All Channel and Marina Depths Indicated are for Both the Initial and Maintained Depths Below Mean Low Tide.

MITIGATION

BORROW PITS FOR MARINA USE

March 7. 2000

No filling of existing waters is required except the west end of borrow pit #1.

The bottom configuration of the marina shall be adjusted by dredge so the water depths will be as shown on the plans. No part of the marina will be deeper than -8.5 feet below MLW other than as shown on the plans. Only clean fill material shall be used as fill.

SUBDIVISION DEVELOPMENT

There shall be a 50 foot buffer between residential plots and the existing upper limits of wetlands vegetation as determined by a wetlands determination.

No storm sewers shall be allowed to flow into the marina or marsh except where shown on the plans. The marina area, being an island, will have storm sewer outlets where the water exchange is greater if possible.

SUBDIVISION AND MARINA RESTRICTIONS

No discharge into the marina shall be allowed of human wastes or garbage, including but not limited to, the remains of fish, shrimps, crabs, and other organic wastes. This will be included in subdivision restrictions and posted in the marina areas where it may be easily seen. Notices will also be distributed regarding oil, fuel, chemicals, plastics and other prohibited materials.

Speed limits for boats shall be set below the speed that creates visible wakes.

MARSHLAND DEVELOPMENT

An area as proposed for marshland development will have its elevation lowered and sprigged or otherwise developed to create wetlands using the best technology available as mutually agreed upon by the permittee, his environmental consultant, the U.S. Fish and Wildlife Service, National Marine Fisheries Service and Texas Parks and Wildlife Department. See proposed linear type mitigation area, rather than a more remote 7 acre area.

MITIGATION

MARSHLAND DEVELOPMENT

March 7, 2000

SITEWORK

An approximate 7 acre area of uplands shall be developed as indicated into salt marsh on the fringe of existing Spartina alterniflora marsh along Moses Lake *concurrently with wetland destruction* . The construction of the new marsh will begin at the actual boundary between wetlands and uplands, as determined by a delineation made by a professional biologist and approved by the U S Army Corps of Engineers before construction begins around the existing marsh. From the approved delineation, the new marsh shall be sloped toward a mid-depth of -2.0 ft. The -2.0 ft. elevation shall be maintained through a 50 ft. wide section in the middle of the marsh area and from the north to the south side. From this area a gradual slope shall be created to the landward boundaries of the area on the east. The outside edges of the marsh area shall be a 2.0 ft. elevation. A ditch, 6 ft. wide and at -2.0 ft. elevation, will connect the marsh area to the edge of the lake on the northwest side. This ditch shall extend as far as the dragline will reach or to the edge of the bay. A second ditch shall connect new marsh to adjacent existing marsh on the south side. This ditch will extend out as far as the drag line will reach from the marsh construction site.

ALTERNATE MITIGATION SITE

At the option of the permitee, an alternate site in the Moses Lake area may be proposed for the 7 acre mitigation area. Site will be adjacent to wetlands. Permit shall be changed by addendum after location and design approval by the COE.

PLANTING

Two species of plants, Spartina alterniflora (smooth cordgrass) and Spartina patens (saltmeadow cordgrass), shall be sprigged into the area after soil removal and slope construction are completed. All plants shall be dug from the adjacent wetlands if available, broken into sprigs, kept moist during transportation by enclosing or

wrapping the burlap bags or plastic bags, and transported to site on same day of transplanting.

Spartina alterniflors shall be broken into single culms (stems) with its associated roots. Roots will be considered adequate if ten or more roots are located on each stem. Plants shall be young growing stems, preferably about 1 foot tall.

Spartina alterniflors shall be planted from -1.0 ft. elevation to MHW.

Spartina patens shall be broken into 4-6 culms with its associated roots. Roots shall be readily visible from a distance. Plants shall be green and healthy as opposed to clear brown stems.

Spartina patens shall be planted from MHW in Moses Lake to the +2.0 ft. elevation (to the highest elevation of marsh site).

Ideal planting times for both species is late winter, spring, or early summer. Planting during any month is possible but good planting stock is more difficult to locate.

Plants will be planted as soon as possible after digging. Holding plants overnight shall be avoided where possible. If possible a tractor and mechanical planter shall be used to plant each sprig in rows. Where not feasible, sharpshooter shovels shall be used to open divots. Sprigs shall be inserted into divots and soil packed around plants by foot pressure.

All plants shall be transplanted into rows. The rows and plants in rows shall be spaced at *1.0 meter intervals, with rows offset by 0.50 meters.*

MONITORING PLAN

Monitoring will be conducted within 60 days following the initial planting effort to determine initial success. If 50 percent survival of transplant material is not achieved, a second planting effort will be made within the next 30 days. A written report and photodocumentation detailing the results shall be submitted immediately following the first and/or second survey to all resource agencies.

If at least 70 percent canopy coverage is not achieved within two years following the initial planting, an additional planting will be conducted, and those areas not vegetated will be replanted.

Monitoring will be conducted for three years following the initial planting. The amount of vegetative cover, in percent, will be monitored within the mitigation area and subsequent progress reports, including photodocumentation, shall be submitted to the resource agencies at one year, two year, and three year intervals following the initial planting.